201/1936

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LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

List of Trees and Shrubs mentioned in the Report and their Scientific names.

English and Vernacular names.	Scientific name.
Anjan	*Hardwickia binata.*
Apta	*Bauhinia racemosa.*
Babul	*Acacia arabica.*
Bahan	*Populus euphratica.*
Bamboo	*Dendrocalamus strictus.*
Casuarina	*Casuarina equisetifolia.*
Heddi	*Adina cordifolia.*
Hirda	*Terminalia chebula.*
Hongal	*Terminalia paniculata.*
Honne	*Pterocarpus marsupium.*
Kandi	*Prosopis specigera.*
Khair	*Acacia catechu.*
Lantana	*Lantana camara.*
Lai	*Tamarix sp.*
Mango	*Mangifera indica.*
Matti, Ain	*Terminalia tomentosa.*
Mhowra	*Bassia latifolia.*
Mulberry	*Morus alba.*
Nana	*Lagerstroemia microcarpa.*
Rosha	*Cymbopogan martinii.*
Sandal	*Santalum album.*
Sissum	*Dalbergia latifolia.*
Shivan, Shivni	*Gmelina arborea.*
Sawar, Simul	*Bombax malabaricum.*
Tali	*Dalbergia sissoo.*
Teak	*Tectona grandis.*
Tiwas, Karimuttal	*Ougeinia dalbergioides.*
Tarwad	*Cassia auriculata.*
Timbru	*Diospyrus melanoxylon.*

FOREST ADMINISTRATION REPORT OF THE BOMBAY PRESIDENCY INCLUDING SIND FOR THE YEAR 1934-35.

CHAPTER I.

CONSTITUTION OF STATE FORESTS.

1. ALTERATIONS IN AREA. (Forms Nos. 51 and 51A.)

The following table shows the changes in forest area which occurred during the year :—

Class of forest.	Area on 1st April 1934.	Added during the year.	Excluded during the year.	Area on 31st March 1935.
	Sq. miles.	Sq. miles.	Sq. miles.	Sq. miles.
Reserved .. In charge of Forest Department ..	11,660	46	50	11,656
Reserved .. In charge of Revenue Department.	1,657	....	4	1,653
Protected .. In charge of Forest Department ..	246	15	16	245
Protected .. In charge of Revenue Department.	622	....	2	620
Total ..	14,185	61	72	14,174

The areas added and excluded comprise :—

	Square miles. Gain.	Loss.
Afforestations and disforestments in favour of cultivation	11	10
Alluvial accretions and erosions in Sind	14	11
Transfer from Reserved to Protected Forest ..	15	15
Rectification by resurvey	11	8
Transfer from Protected to Reserved Forest ..	10	10
Errors corrected	..	18
	61	72

Net loss 11 square miles.

Large areas of reserved forest, viz. 3 square miles in the Northern Circle, 4 square miles in the Central Circle and 3 square miles in the Southern Circle were disforested chiefly for purposes of cultivation. Erosions in Sind Circle resulted in a loss of 6 square miles of reserved and 5 square

miles of protected forest. Correction of some errors in the record of forest areas in the Kanara Eastern Division and resurvey of forest areas in the Sind Circle were responsible for the reduction of 26 square miles.

There was an addition of 11 square miles to the reserved forest owing to afforestments of Government Waste lands in the Mandvi Sub-Division of the Central Circle. 25 square miles were added to the reserved forest due to alluvial accretions and to rectification of forest areas by resurvey in the Sind Circle.

The forest lands (about 4 square miles) given out for cultivation in exchange for malki lands submerged in the Andhra Valley and Mulsi lakes in the Central Circle still await disforestment.

2. Forest Settlements.

The area under settlement at the commencement of the year was 93 square miles, to which an area of nearly 22 square miles was added. 36 square miles were settled during the year and 29 square miles still remain to be settled. No expenditure was incurred on settlements during the year.

All the area under settlement in the Mandvi taluka, Surat District, was finally settled. The settlement of 1,713 acres in the Kolaba Division is still pending the decision of the Privy Council on the appeal preferred by Sardar Biwalkar.

3. Demarcation.

161 miles of new boundaries were artificially demarcated in the Northern, Southern and Sind Circles at a cost of Rs. 1,261. 52 miles remain to be demarcated in the Northern and Southern Circles. The existing boundary lines and marks were repaired in all Circles at a cost of Rs. 2,491. In addition 25 miles of frontier lines between Goa and British territories were cleared at a cost of Rs. 473. The total length of the boundaries at the close of the year was 40,832 miles.

As desired by the Forest Advisory Committee, 5,425 new boundary cairns were erected between the old boundary cairns in the scrub forests of East Khandesh Division through the agency of forest guards in order to distinguish the open and closed area. The sub-block boundaries were also painted with colours.

4. Forest Surveys.

No survey work was carried out during the year. The area still to be surveyed is 13 square miles in the Northern Circle, 276 square miles in the Southern Circle and 937 square miles in the Sind Circle.

The expenditure on the constitution of State Forests was :—

	1934-35.	1933-34.
	Rs.	Rs.
Northern Circle	1,169	1,444
Central Circle	4	19
Southern Circle	57	..
Sind Circle ..	..	9

CHAPTER II.

MANAGEMENT OF STATE FORESTS.

1. REGULATION OF MANAGEMENT.

(a) *Preparation and Control of Regular Working Plans.*

Preparation (Form No. 55).—The revised working plan for the Haliyal Teak Pole Forests, including Block VII-A, and the working plan for the Nagzari Valley and the Kalinadi-Kaneri slopes were sanctioned by Government.

The revised working plan for the Thana forests and the working plan for the Satara forests have been completed and are being printed.

The revised working plan for the Nasik Scrub and Teak Pole Jungles drawn up by the Divisional Forest Officer, Working Plans, requires to be corrected and rewritten in part. This work will be taken in hand soon.

Work in connection with the following plans was continued during the year :—

(1) Revised Working Plan for the Igatpuri forests.

(2) Working Plan for the Thana Gurcharans.

(3) Revision of the Nawapur-Nandurbar and Deomogra Working Plans, West Khandesh Division.

(4) Revision of the Working Plan for the Satmala forests, East Khandesh Division.

(5) Revision of the Yellapur-Mundgod High Forest Working Plan (E. D. Kanara).

(6) Revision of the Gund Working Plan (N. D. Kanara).

(7) Working Plan for the Castle-Rock Fuel Supply (W. D. Kanara).

(8) Revised Working Plan for all the Coastal Casuarina Plantations (Kanara Western Division).

(9) Revised Working Plans for the forests of Lower and Upper Sind Divisions.

(b) *Control of Working Plans.*

The prescriptions of the sanctioned working plans were generally followed in all Circles. In the Northern Circle several coupes remained unsold for want of demand owing to poor quality of growth, inaccessibility or long leads. As stated in the last year's report the prescriptions of the Umarpata Working Plan in the West Khandesh Division were modified and inferior species over 18″ were marked for felling only when they interfered with the development of superior species. In Deomogra clear fellings of extensive patches, covered only with mature and valueless injaili, were carried out in coupes marked for improvement felling. This facilitates the reboisement of blanks by artificial planting. Some fuel coupes in Kanara Western Division and Dharwar-Bijapur Division were withheld from sale owing to slump in the fuel market. In the Sukkur and Shikarpur Divisions some coupes remained unsold for want of demand. In the Karachi Division owing to the severe frost of 1929 and vast accumulation of dead wood, arrear coupes of previous years only were worked.

2. Communications and Buildings.

(*a*) *Roads and Bridges.*

Construction work was undertaken on 12 miles of new roads in the Northern and Southern Circles, and repairs were carried out over 1,084 miles of existing roads and paths in all Circles. The total expenditure amounted to Rs. 8,127 on new works and Rs. 92,978 on repairs, compared with Rs. 26,070 and Rs. 88,584 in the previous year. The expenditure incurred on repairs includes Rs. 45,590 spent on the Alnavar-Dandeli Railway as maintenance charges.

The plans and estimates, the latter amounting to Rs. 2,59,467 for the proposed Ozar-Saiwan road in the Northern Circle were administratively approved by Government. This road which is nearly 31 miles in length will when completed provide through communication from Nasik to the coast. It will, besides being of great value for purposes of administration, open up large tracts of valuable forests of West Nasik and North Thana Divisions, hitherto not provided with communications. It is hoped that funds will be granted early for the construction of this very important road.

The survey of the proposed Bhanwad-Mankhed road in the West Nasik Division was completed by the Forest Engineering establishment. Plans and estimates for this road as well as for the Temba-Parali road in the East Thana Division are awaited from the Forest Engineer.

No progress could be made with the Dara-Dhadgaon road in North Khandesh for want of funds.

(*b*) *Buildings.*

Out of Rs. 63,090 spent on buildings, Rs. 38,543 were on new works and the balance of Rs. 24,547 on repairs. The corresponding figures for the previous year were Rs. 32,745 and Rs. 24,135 respectively.

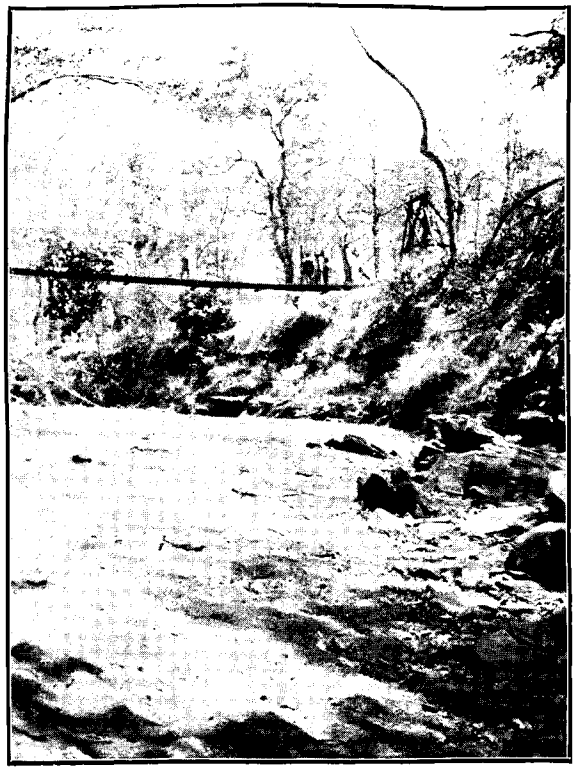
The store-houses at Harsul and Waghera in the West Nasik Division were taken over by this Department from the District Local Board as sanctioned in Government Resolution, Revenue Department, No. 3146/33, dated 6th December 1934.

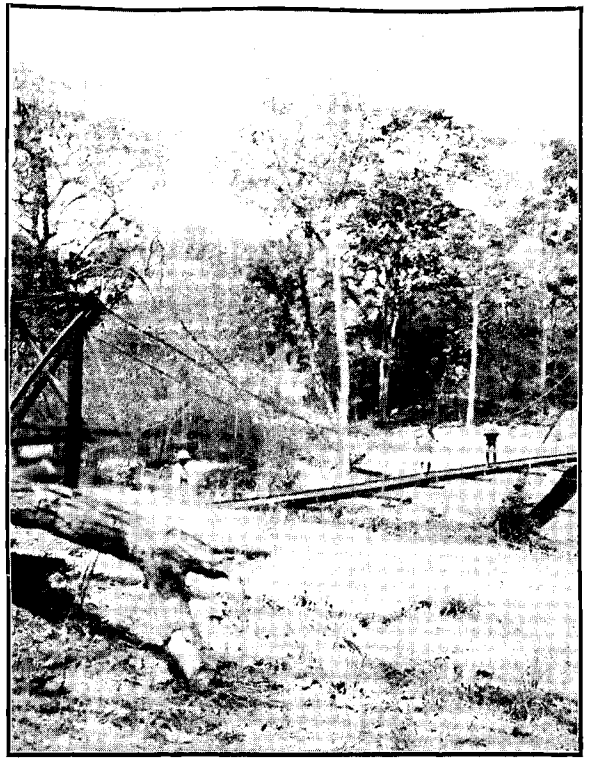
The necessity for providing more housing accommodation for subordinates has been emphasized by all Conservators. Until proper housing has been provided for every subordinate the condition of the Forest Department cannot be considered as satisfactory. Few buildings have been put up in the past years owing to lack of funds, but it is hoped that from now on such provision will be made as will enable real progress to be achieved in the future.

(*c*) *Miscellaneous* (*other works*).

Rs. 2,760 and Rs. 5,194 were spent on new works and repairs respectively against Rs. 1,412 and Rs. 7,843 last year. The expenditure under this head was incurred chiefly on wells, fencing of compounds, telephone rent, charges for water supply paid to the Public Works Department, silt-clearance and repairs to bunds and karias in Sind.

A suspension bridge over the Mhasti Nala in E. D. Kanara, Southern Circle.





G. P. Z. P. 1935

Distance between piers	...	100′
Length of foot bridge	...	90′
Dip of $\frac{1}{10}$ span	...	10′
Clear width of foot bridge	...	2′-6″
Total cost exclusive of cables		Rs. 450.

3. Protection of Forests.

(*a*) *General Protection.* (Form No. 57.)

The following statement compares the number of forest offences of the year with those of 1933-34 and the average of the last three years :—

Class of offence.	1934-35.					1933-34.	Average of 1931-32 to 1933-34.
	Northern Circle.	Central Circle.	Southern Circle.	Sind Circle.	Total.		
I. Injury to forest by fire.	645	621	346	450	2,062	1,967	1,970
II. Unauthorised felling or removal of produce.	4,090	4,205	1,602	1,629	12,426	11,301	11,385
III. Unauthorised grazing.	2,374	1,880	601	2,305	7,160	6,634	6,601
IV. Other offences.	1,128	1,062	478	391	3,059	2,854	2,819
Total of 1934-35 ..	9,137	7,768	3,027	4,775	24,707	..	..
Total of 1933-34 ..	8,121	8,146	2,661	3,828	..	22,756	..
Average of 1931-32 to 1933-34.	7,738	8,512	2,872	3,653	..	..	22,775

As compared with the previous year there was an increase of 1,951 in the total number of forest offences, all the Circles contributing thereto. This increase is seen in all classes of offences.

Injury by fire.—There was on the whole an increase of 95 cases over that of the preceding year, Sind Circle alone contributing thereto. Causes of forest fires are discussed under " Protection from fire".

Unauthorized fellings.—The Northern, Southern and Sind Circles record an increase of 617,256 and 294 cases respectively. The increase in the Northern Circle mainly occurs in the West Nasik Division and is attributable to the register maintained in the Divisional Office for recording offences reported by each subordinate as stated in the last year's report. The increase in the Southern Circle is reported to be due chiefly to the habitual illicit cutting of fuel for sale by Berads in the Belgaum Division and Lamanis in the Dharwar-Bijapur Division. The Collector of Belgaum suggests that an attempt to settle the Berads to a peaceful and honest life be made by granting them waste forest lands and that in the meanwhile communal punishment be resorted to. A liberal grant of 3,000 acres of forest land has already been made to the Berads in the Belgaum Division at an average of 2 acres per family. In spite of this, illicit cuttings are still being carried on by them. A strict warning will be issued to them and if they still persist in their attitude communal punishment will be resorted to as suggested by the Collector. The increase in the Sind Circle is attributed to the fact that due to scarcity of grass consequent on low inundation of 1934, maldars resorted to lopping and trespass in closed areas for fodder.

Unauthorized grazing.—The total number of offences committed under this head increased from 6,634 to 7,160. The increase occurs mainly in the Northern and Sind Circles and is attributed to stricter supervision and greater vigilance on the part of subordinates leading to fewer cases going undetected.

Other offences.—On the whole there was an increase of 205 cases as compared with those of the previous year. All Circles except the Central Circle contribute to the increase. The offences represent cases of violation of transit and game rules and encroachment in forest areas, and variations in offences of this sort cannot be attributed to any particular cause.

Two hundred and seventy-four new cases were taken to court during the year. 265 cases, including 108 cases pending from the previous year, were decided and of these 236 or 89 per cent. resulted in convictions. 20,896 cases were compounded and compensation amounting to Rs. 1,01,596 was recovered in 20,295 cases, the average per case being Rs. 5 as compared with Rs. 4·9 in the previous year. Offenders in 601 cases were let off with a warning and in 3,548 or 13 per cent. of the new and pending cases the offenders were not detected.

The two cases under the Indian Penal Code pending from last year in the Hyderabad Division, Sind Circle, were disposed of, the offenders being convicted and sentenced to pay fines. 9 fresh cases, 3 in Shikarpur Division, 2 in Larkana Division and 4 in Hyderabad Division were taken to court under the Indian Penal Code under various charges, viz., assaulting and making false allegations against forest subordinates, stealing Government camels and encroaching on forest lands. 6 of these resulted in convictions and 3 are pending in the court.

(*b*) *Protection from fire.*

The figures in the subjoined statement compare the result of two fire seasons, 1st June 1933 to 31st May 1934 and 1st June 1934 to 31st May 1935. These figures do not tally with those in Appendix 58 which are for the financial year ending 31st March 1935 :—

Circle.	Fire season of.	Area attempted to be protected.	Failures.	Area actually protected.	Percentage of area actually protected.	Cost.	Cost per square mile protected.
		Sq. miles.	Sq. miles.	Sq. miles.		Rs.	Rs.
Northern ..	1934-35 ..	2,605	89	2,516	97	8,570	3·4
	1933-34 ..	3,334	69	3,265	98	11,675	3·6
Central ..	1934-35 ..	3,919	361	3,558	91	8,475	2·4
	1933-34 ..	3,897	466	3,431	88	7,903	2·3
Southern ..	1934-35 ..	1,440	52	1,388	96	7,635	5·5
	1933-34 ..	1,574	71	1,503	95	8,328	5·5
Sind ..	1934-35 ..	487	26	461	95	773	1·7
	1933-34 ..	484	10	474	98	746	1·6
Total ..	1934-35 ..	8,451	528	7,923	94	25,453	3·2
	1933-34 ..	9,289	616	8,673	93	28,652	3·3

In the Northern Circle, compared with the figures for the past year there has been an increase in the area burnt, the Panch Mahals, North Thana and East Thana Divisions contributing thereto. The severe frost of February 1935 which caused the grass to dry up early and in consequence rendered the forests more inflammable than usual mainly accounts for the increase in the North and East Thana Divisions. In the Panch Mahals Division contractors of grass and timbru leaves and cattle thieves are reported to be responsible for some of these fires while a net work of roads, cart-tracks and railway lines passing through the forest account for a certain number of accidental fires.

The total area burnt in the Central Circle was less than the previous year. All Divisions except North Khandesh show a decrease. In the East Khandesh Division precautions were taken by burning more fire lines on both sides of roads and along cart-tracks in coupes. Villagers and contractors promptly helped to extinguish fires. The increase in the North Khandesh Division is chiefly due to fires having spread to inaccessible portions of forests.

Compared with the figures for 1933–34 there has been a reduction in the number of fires and the acreage burnt in the Southern Circle, though Kanara Eastern Division is responsible for an appreciable increase which is attributed to the lack of the usual hot weather showers and dryness of the forest. The decrease in other Divisions indicates that the protective measures adopted were largely successful. Some heavy fires are reported to have occurred outside the protected area in Kanara Northern, Eastern and Belgaum Divisions mainly due to an unusually warm summer and total absence of early showers.

Both the number of fires and the area burnt increased in the Sind Circle. The increase is shared by all Divisions and is the direct result of the dry and inflammable condition of forests for which the low inundation of 1934–35 and the severe frost are entirely responsible. Wilful incendiarism on the part of maldars to obtain fresh grass and the carelessness of passersby in throwing live cigarettes in forests are also partly responsible for the increase.

For good fire protection remission and reduction of grazing fees were granted in 22 villages in the West Khandesh Division. Rewards in the shape of turbans of the value of Rs. 125 were distributed among the Patils in the Mandvi Range. Money rewards were also paid to those persons who rendered help in putting out fires in the East Khandesh Division. In the Southern Circle, 37 villages, 21 persons and 509 cattle were allowed free grazing for good protection. Remission of grazing fees was granted

in the case of 485 cattle owned by charitable institutions in the Bijapur District. Reduction of grazing fees was granted in some cases, and 9 villages in Kanara Eastern Division were punished with enhancement of grazing fees for bad fire protection.

(c) *Protection from cattle.* (Forms Nos. 60 and 61.)

The forest areas open and closed to grazing were as follows :—

	Sq. miles.	Per cent.
Closed to all animals for whole year	1,463	10·3
Closed to all animals for part of the year.. ..	322	2·3
Open to all animals except browsers for the whole year	9,480	66·9
Open to all animals for the whole year	2,891	20·4
Open to all animals for part of the year	17	0·1
Total ..	14,173	....

The area open to grazing was generally sufficient and closure was relaxed as usual in cases of hardship.

2,426,021 animals are recorded as having grazed in the forests of the Presidency during the year as compared with 25,38,734 in the previous year and 2,405,404 the average of the last 3 years. Of these 1,866,406 were horned cattle, 542,099 sheep and goats, 2,898 camels and 14,618 other animals. The number of cattle admitted to graze free in the forests was 5,73,282 as against 6,15,183 in the previous year.

There was a decrease in the number of cattle admitted to graze as compared with that of the previous year. The decrease is shared by all Circles except the Central Circle. In the Northern Circle the decrease is attributed to the fact that owing to the failure of monsoon and the consequent shortage of fodder a number of shepherds migrated from East Nasik Division to Berar for grazing. An occurrence of cattle disease in the West Thana Division was also responsible to some extent for the decrease. The increase in the Central Circle is chiefly due to large herds of horned cattle and sheep and goats having been brought by professional graziers and Thilaries in the West Khandesh Division for grazing. In the Sind Circle the decrease is chiefly due to poor inundation and extremely severe frost rendering the grass coarse and dry. The quality of the grazing was therefore poor, and fewer people were willing to pay for it.

The grazing fees collected during the year amounted to Rs. 5,56,790 as against Rs. 5,61,056 in the previous year, the value at full rates being Rs. 22,57,602.

The number of cattle impounded was 95,068 as compared with 89,996 in the previous year and 97,075 the average of the past 3 years. The increase is shared by all Circles and is mainly attributed to strict supervision resulting in the detection of a larger number of offences of illicit grazing.

(*d*) *Protection against injuries from natural causes.*

Vegetable pests.—Creeper-cutting was carried out as usual through the agency of forest contractors and subordinates. Lantana is reported to be coming up and seriously affecting some kurans in East Nasik Division. Remarkable results were achieved in the destruction of prickly pear in the Bijapur District and in the Gokak and Gujnal Ranges of Belgaum Division by introducing the Cochineal insect. The Goleskop kuran in the Bagalkot Range which was full of prickly pear, was entirely cleared of it by this method for planting *babul* (*acacia barabica*). Loranthus is reported to be spreading in some plantations in the Kanara Western Division and steps have been taken to cut back all affected stems.

Animal pests.—Some damage was as usual caused in young plantations by wild elephants, bison, sambhar, monkeys, porcupine, wild pigs and rats.

Insect pests.—Damage by teak defoliators occurred in the North and East Thana Divisions. In the West Thana Division young seedlings were killed by root-eating larvae in some forests. In the Kanara Western Division some seedlings in new teak plantations were destroyed by crickets. Damage was caused by the teak stem borer in regeneration area of the Belgaum Division.

Frost and erosions.—Owing to severe frost in January 1935 considerable damage was caused to young teak in the regeneration areas in the Northern Circle and in West Khandesh. In Peint even mature teak was affected. In Sind the damage caused by frost was great. In the Sukkur Division in some places regeneration 5 to 10 years old and as much as 20 feet high was wiped out. All Divisions report considerable damage to young *babul* crops. The damage to casuarina plantations of Akshi and Nagaon in the Kolaba Division by erosion continued and about 13 acres of land were washed away. In the Sind Circle the total area eroded by the action of the river Indus was 11 square miles as against 15 square miles in the previous year. The amount realized by sale of the material exploited from eroded areas was Rs. 16,494. A sum of Rs. 35,553 was also realized by sale of material obtained from 5 square miles which were exploited in anticipation of erosion.

CHAPTER III.

SILVICULTURE.

(1) System of Management.

8,494 square miles or 71·3 per cent. of the area under the management of the Forest Department are organised and worked under the various systems shown below :—

Silvicultural systems.	Area in square miles.	Percentage of the total area.
1. Clear felling	3,789	31··
2. Selection	722	6··
3. Uniform	69	0·61
4. Group selection	4	
5. Selection cum improvement	1,136	9·54
6. Coppice with standards	1,383	11·61
7. Simple coppice	313	2·63
8. Other	1,078	9·03
Total under silvicultural systems ..	8,494	71·3
Protection, grazing and unallotted	3,407	28·7
Grand total ..	11,901	100·00

(2) General Progress of Regeneration and Afforestation.

(Form No. 62.)

(a) *Mainly Natural.*

The total area under natural regeneration both concentrated and not concentrated was 61,571 acres of which 21,570 were in the Northern Circle, 16,572 in the Central Circle, 17,323 in the Southern Circle and 6,106 in the Sind Circle.

(i) *Concentrated.*

Natural regeneration in the exploited areas was supplemented in all the Divisions on a more or less intensive scale by dibbling of seed of teak, sandal and other valuable species on burnt patches and by transplanting and stump planting. The results were on the whole satisfactory. In the

G. P. Z. P. 1935 Deomogra Reserve -Coupe No. 6, Block II, West Khandesh Division.
Illustrates results of successful fire protection.
Note:—Prolific natural teak regeneration where *babul (Acacia arabica)* once flourished.

three Thana Divisions alone 966,035 seedlings of teak and other species were raised on burnt patches out of which 703,997 were alive at the end of the year. In the Kolaba Division the survivals were 449,243 teak, 40,859 junglewood and 878 bamboo seedlings.

In the West Thana Division a few unburnt patches were planted with stumps and seedlings of teak. The stumps are progressing fairly well whereas the transplants are just struggling with little hope of survival. In the East Nasik Division several coupes were regenerated on the agri-cum-forestry system. In the above Ghat areas of the West Nasik Division attempts were made to regenerate the exploited coupes on the *rab* system but all the seedlings raised during the year were destroyed by frost.

An important innovation this year was the introduction of agri-cum-planting in teak bearing areas in Navapur, Nandurbar and Deomogra in the West Khandesh Division. Frost caused a severe set-back but the damaged seedlings revived later and an excellent teak plantation is said to be in prospect. In the Kolaba Division more extensive use was made during the year of the willingness of Thakurs and Katkaris to do planting work in return for the privilege of being allowed to raise *nagli* and *wari* crops. 67 coupes were regenerated by this method as against 57 in the last year. In the Poona Division transplants of *Dendrocalamus strictus* were put out in the exploited coupes and are now established in the Poona Range.

In Sind the inundation of the year was low and much below normal in duration. The area flooded was only 294,900 acres as compared with 555,547 acres last year and 528,828 acres in the year before.

Reproduction by coppice of *kandi, lai* and *bahan* was on the whole satisfactory in all the Divisions but in the Sukkur Division most of this regeneration including that resulting from *kandi* sowings succumbed to the effects of frost which in the Shikarpur Division also affected the new crop of *babul* and *kandi* seedlings. Owing to a low *abkalani* the inland forests received no water and natural regeneration in the Larkana Division was therefore confined during the year to a very small area. In the Hyderabad Division regeneration of *babul* from seeds passed by cattle, and from surrounding trees in certain inland areas, was satisfactory but the seedlings were subsequently damaged to a considerable extent by frost.

The scheme for controlled irrigation of inland forests with surplus water from barrage canals has not yet been sanctioned by Government.

(ii) Not concentrated.

The progress of natural regeneration both by coppice and seed was on the whole satisfactory throughout the Presidency.

In the Panch Mahals and East Nasik Divisions, seeds of teak, *mhowra* and other useful junglewood species were sown in blanks, either in pits

or furrows, with good results. Frost however did considerable damage in both the new and old plantations. In the North Thana Division *sawar* was sown in areas within a radius of 12 miles from Railway stations and bunders while in the open areas of Igatpuri Range mango was planted. *Apta* seed was sown in the Tansa catchment area with successful results. In the unorganised areas of the West Khandesh Division sowings of *babul, khair* and sandalwood in conjunction with *Cassia siamea,* were tried but the results were poor. In the Poona Division sandalwood with *Cassia siamea* was sown under the shelter of bushes and in the Karad Range of the Satara Division, *Cassia siamea* was sown with fairly satisfactory results. *Babul* was also tried in the Padli forests of the Satara Range with about 40 per cent. success.

(*b*) *Mainly artificial.*

Out of the 26,378 acres taken up for artificial reboisement 23,873 acres were in Sind and were sown with seed of *babul* and *kandi.* Pre-mid and post-*abkalani* sowings of *babul* and *kandi* were also carried out as usual in coupes, *kachas* and blanks. The results of the operations were satisfactory in the beginning but subsequently the seedlings were adversely affected by frost.

In the Larkana Division *tali,* mulberry and seed of exotics from the Presidency proper were sown in areas which are to receive an assured supply of water from the Public Works Department canals.

In the Presidency proper the area regenerated by artificial means was 2,505 acres. In the exploited *babul* coupes of the Poona and East Khandesh Divisions *babul* seed was sown after ploughing. Plantation work was done departmentally in all but 4 coupes in the Poona Division which were given on lease on agri-cum-forestry terms.

In the Southern Circle 482 acres in Kanara Northern Division, 592 acres in Kanara Western Division, 461 acres in Kanara Eastern Division, and 18 acres in Belgaum were brought under artificial regeneration during the year at a cost of Rs. 30,556. The principal species raised was teak. The general condition of the plantations is said to be satisfactory.

In Kanara Eastern Division, sandalwood seed was dibbled and seedlings were transplanted under lantana bushes over an area of 3 acres in the forest of the Sirsi-Siddapur Range with fair success.

In Kanara Western Division, 19 acres in Chitakula and 58 acres in Kasarkod and Haldipur were planted with casuarina. 120 acres in the Ramanguli-Ankola high forest, 427 acres in the below-ghat inland forest and 45 acres on the Arbail slopes were planted with teak and useful junglewoods such as *shishum, honni* and mahogani. The results achieved were fairly satisfactory.

G. P. Z. P. 1935.

Deomogra Reserve—Coupe No. 43, Block III, West Khandesh Division.
Successful fire protection has induced natural teak regeneration.
Note:—Dying out of *ain (Terminalia tomentosa)* in the wake of natural teak.

The total area of artificially raised teak plantations in the Southern Circle is as follows :—

Division.	Area to end of 1933-34.	Area added during the year.	Area written off as failure in previous years.	Area written off as failure during the year.	Net total area successfully regenerated.
	Acres.	Acres.	Acres.	Acres.	Acres.
N. D. Kanara	4,221	482	416	41	4,246
W. D. Kanara	8,806	592	424	..	8,974
E. D. Kanara	5,589	461	1,540	..	4,510
Belgaum	261	18	64	..	215
Total ..	18,877	1,553	2,444	41	17,945

(c) *Afforestation.*

The area given out in the Sind Circle for temporary cultivation in order to prepare lands for reafforestation during the next or subsequent years amounted to 11,341 acres as against 15,707 acres during 1933-34 and the assessment realised was Rs. 43,427. Most of these areas are either *kacha* lands on which the flood water remains at too high a level for the introduction of tree growth at present or recently felled coupes containing rank grass. Such areas are given out for a year's cultivation in order to work up the soil and clear the area of *lai* etc. before sowing with *babul*. Blanks which have failed to respond to direct methods from various causes are also treated in this way.

In the Sukkur Division blanks and cultivated areas were sown with *babul* and *kandi* seeds with excellent results, but over 90 per cent. of the regeneration was subsequently killed by frost.

In the Larkana Division out of 1,106 acres cultivated with kharif crops 325 acres were in areas which are to receive assured water supply from the barrage canals and the rest 781 in non-assured areas.

To 533 acres of *tali* (*Dalbergia sissoo*) remaining at the close of last year 10 and 12 acres were added in the Sukkur and Larkana Divisions respectively at a cost of Rs. 65, bringing the total to 555 acres.

In all 1,961 maunds of seed were sown in *kachas*, blanks, erosion strips and cultivation aggregating 15,606 acres in this circle and the results obtained were good.

(3) Tending of the Growing Stock.

Northern Circle.—In the Panch Mahals Division cleanings were carried out in coupe No. 2 of all blocks. Thinnings were also carried out at a cost of Rs. 3,490 in 15-year old coupes of the Western Mahals and the resultant material was sold for Rs. 11,248. No thinnings were carried out in the Eastern Mahals as the crop is very poor and open.

In the 3 Thana Divisions cleanings were carried out in all 5-year old coupes as provided for in the Revised Working Plan. First thinnings were carried out in 110 coupes of the North Thana Division, 75 coupes in the East Thana Division and 80 coupes in the West Thana Division. All the 110 coupes in the North Thana Division were worked departmentally at a cost of Rs. 5,919. The resultant material of 91 coupes was sold for Rs. 18,050 while that from 19 coupes remained unsold. In the East Thana Division 54 coupes were sold standing to purchasers for Rs. 7,147–12–0 and the remaining 21 coupes were worked departmentally at a cost of Rs. 367. In the West Thana Division 43 coupes were sold standing for Rs. 3,298 and 22 coupes were worked departmentally at a cost of Rs. 467–2–0. The material from 14 of the coupes worked departmentally was sold for Rs. 1,351 while that from 8 coupes remained unsold. The thinnings marked in 15 coupes were cut and removed by villagers as the material was unsaleable.

In addition to the above, second and third thinnings were carried out as laid down in the Revised Working Plan. The number of coupes worked and the revenue realised are tabulated below :—

Division.	No. of coupes sold.	Price realised.
		Rs. a. p.
North Thana	67	94,011 0 0
East Thana	64	47,496 8 0
West Thana	74	22,284 0 0
Total ..	205	1,63,791 8 0

Four coupes in North Thana, 18 in East Thana and 15 in the West Thana remained unsold.

In the West Nasik Division 6 coupes in the Peint forests felled since 1923 were cleaned and thinned at a cost of Rs. 69.

The Badgi plantations in which cleanings and thinnings were carried out in the years 1932-33 and 1933-34 are again threatened with very serious damage from bamboos and jungle woods. Consequently another thorough cleaning has been ordered.

Creeper cutting was done in all Divisions.

Central Circle.—Thinnings were carried out in 14 coupes of the Teak pole area in the East Khandesh Division and in the 15-year old coupes of the Bulsar-Chikhli and Mandvi Forests of the West Khandesh

Division at a cost of Rs. 675 and Rs. 315 respectively. The resultant material remained unsold in the East Khandesh while that in the West Khandesh fetched Rs. 617. Thinnings combined with cleanings and climber cutting operations were also carried out in the Navapur-Nandurbar area with the object of relieving congestion in the growing stock at a cost of Rs. 709 and the resultant material was sold for Rs. 180.

In the Poona Division mechanical thinnings for the betterment of the growing stock in the *babul* area including the exploitation of dead, dying and uprooted *babul* trees, were carried out at a cost of Rs. 2,185 and the resultant material was sold for Rs. 6,696. Thinnings were also carried out in 4 coupes in the Junnar Range at a cost of Rs. 21 the resultant material being sold for Rs. 60.

In the Kolaba Division cleanings were done in 122 coupes some through the villagers in return for the resultant material and the rest departmentally at a cost of Rs. 605. The resultant material fetched Rs. 47-4-0. Out of the 74 coupes under the old coppice with standard system and 3 arrear coupes of last year, which were due for thinning, 25 were sold standing for Rs. 667, 23 were worked departmentally at a cost of Rs. 411, 18 were thinned by villagers in return for the resultant material and 6 needed no thinnings. Some of the resultant material of the Departmental thinnings was sold for Rs. 305. Three casuarina coupes were marked for thinning and sold for Rs. 225.

In the Satara Division special thinnings were carried out in the Kikli and Nisre forests at a cost of Rs. 15. The resultant material fetched Rs. 106.

In all Divisions climber cutting was done by the guards wherever possible.

Southern Circle.—Cultural operations were carried out wherever necessary and as far as funds could permit. Improvement fellings were undertaken in 9 compartments of Kanara Northern Division and 25 coupes along with 4 compartments of Kanara Eastern Division. Attention was also paid to the cutting of climbers, creepers, etc., in order to give relief to teak and other valuable species.

Thinnings were undertaken in 2,120 acres of plantations and teak pole coupes in Kanara Northern Division, 54 coupes and compartments in Kanara Eastern Division, 3 compartments and 426 acres of high forest in addition to 108 acres of casuarina plantations in Kanara Western Division, 540 acres of old plantations and coupes in Belgaum Division and 835 acres of teak forests and fuel and fodder reserves in Dharwar-Bijapur Division. The revenue realised from these thinnings was Rs. 13,084 against an expenditure of Rs. 3,194, the net profit to the Department being Rs. 9,890.

Sind Circle.—Much useful work was done in the form of cleanings and spacing of stems in dense young *babul* growth, freeing of young

babul from inferior species, cutting back of malformed *kandi* stems and weeding and stubbing of grass in *tali* plantations.

Thinnings were carried out in all Divisions and consisted, as usual, of the removal of suppressed, dead and fallen stems and branch-wood. Sapling thinnings (stick cleaning) were carried out over an area of 530 acres in the Karachi Division and 93 acres in the Hyderabad Division.

Thinnings and cleanings were also done in the *tali* plantations in Sukkur, Shikarpur and Larkana Divisions.

The area dealt with, material obtained and the revenue realised from thinnings are given below :—

Area exclusive of sapling thinning	8,684	acres.
Resultant material—		
Timber	15,727	cft.
Fuel	4,203,826	cft. out of which 108,813 cft. remained unsold.
Revenue realised	Rs. 1,49,441	

CHAPTER IV.

EXPLOITATION.

(*a*) SYSTEM OF MANAGEMENT.

(*i*) *Major Forest Produce.* (Form No. 63.)

The various systems in force are described under (1) system of management in Chapter III.

As usual all valuable timber from High Forest areas was brought to sale depôts for sale and the inferior wood, left behind after logging operations, was sold by auction. Standing stock in Pole Forests and all coupes were disposed of by auction through the agency of purchasers. Sandalwood in the Southern Circle was extracted and brought to depôts for conversion and sale.

(*ii*) *Minor Forest Produce.* (Form No. 64.)

No changes were made in the methods of disposal of minor forest produce which was as usual mainly farmed out or sold on permits. About 119 khandies of *hirda* were collected departmentally from villages in the Rajur Range of the Poona Division. The material was sold in the local depôts and yielded a profit of Rs. 1,208.

(*b*) Agency of Exploitation.

(*i*) *Departmental Agency.*

The following is a comparative statement of major and minor produce extracted departmentally during the two years 1934-35 and 1933-34 :—

Circle.	Year.	Major Forest Produce.			
		Timber cft. in thousands	Fuel cft. in thousands	Total cft. in thousands	Sandal-wood value.
					Rs.
Northern	1934-35 ..	149	585	734	..
	1933-34 ..	88	150	238	..
Central	1934-35 ..	7	538	545	1,920
	1933-34 ..	15	558	573	3,007
Southern	1934-35 ..	713	..	713	1,00,596
	1933-34 ..	788	2	790	1,02,931
Sind	1934-35 ..	5	66	71	..
	1933-34 ..	3	20	23	..
Total ..	1934-35 ..	874	1,189	2,063	1,02,516
	1933-34 ..	894	730	1,624	1,05,938
Difference		— 20	+ 459	+ 439	— 3,422
Percentage of total outturn from all sources ..		12	2	3	100

Circle.	Year.	Minor Forest Produce—*contd.*			
		Bamboos value.	Grass and grazing value.	Other value.	Total value.
		Rs.	Rs.	Rs.	Rs.
Northern	1934-35 ..	161	..	1	162
	1933-34 ..	152	..	51	203
Central	1934-35 ..	..	..	1,292	1,292
	1933-34 ..	..	..	2,261	2,261
Southern	1934-35 ..	..	..	72	72
	1933-34 ..	..	..	105	105
Sind	1934-35 ..	..	..	640	640
	1933-34 ..	..	..	454	454
Total ..	1934-35 ..	161	..	2,005	2,166
	1933-34 ..	152	..	2,871	3,023
Difference		+ 9		— 866	— 857
Percentage of total outturn from all sources ..		..	..	1	..

A larger number of thinning coupes were exploited departmentally in the North and West Thana Divisions and this fact accounts for the increase under timber and fuel in the Northern Circle.

The decrease under timber and fuel in the Central Circle was mainly due to departmental operations not having been carried out in Khandesh and to a smaller number of wind fallen *babul* trees having been exploited.

The demand for fuel at Mahableshwar and Panchgani depôts was slack owing to the import of charcoal and *babul* wood from outside and also to the fact that fewer visitors now come to Mahableshwar. The decrease under sandalwood was due to fewer mature sandalwood trees having been found for exploitation and that under minor produce was due to poor prices realised for *hirda* collected in the Poona Division.

Kanara Eastern Division is responsible for the decrease in the outturn of timber in the Southern Circle, the main causes being as follows :—

(1) Some arrear coupes were worked in 1933-34 along with the current ones in order to bring the work up-to-date according to the prescribed felling list while no such arrear coupes were exploited during the year under report, and

(2) production of sleepers in Kirwatti mill was reduced and coupes and compartments which were worked departmentally for sleeper pieces were sold standing. No fuel was extracted departmentally during the year. The decrease in the value of sandalwood is due to the fall in the price.

In the Sind Circle the increase under timber was due to supply of logs to the B. B. & C. I. Railway and chopping blocks to the Ordnance Officer, Drigh Road, Karachi. The increase in the outturn of fuel was due to departmental working of an erosion strip in the Larkana Division.

Timber depôts.—The average prices realised at the annual depôt sales in the Northern and Southern Circles are compared in the following table :—

Kind of timber.	Average rate per khandi of 12·50 cft.			
	Nasik Road Depôt.		Dandeli Depôt.	
	1934-35.	1933-34.	1934-35.	1933-34.
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Teak	....	....	22 11 0	24 14 0
Matti	....	....	11 4 0	11 1 11
Nana	....	....	10 7 1	11 0 1
Honne	....	....	12 10 11	14 2 2
Sissum	....	....	11 6 1	11 6 0
Heddi	....	....	10 10 8	9 4 8
Karimuthal	....	....	....	....
Other jungle woods ..	....	....	9 1 4	10 13 10
Teak battens	....	16 9 7	17 6 1	20 12 3
Teak scantlings	15 11 0	20 13 4	18 15 1	23 12 3
Teak planks	....	....	29 3 8	31 11 3

Kind of timber.	Average rate per khandi of 12·50 cft.—*contd.*					
	Kodibag Depôt		Hattikeri Depôt.		Kirwatti Depôt.	
	1934–35	1933–34	1934–35	1933–34	1934–35	1933–34
	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Teak ..	19 2 5	20 10 1	20 2 3	22 4 0	16 10 3	14 4 3
Matti ..	14 5 9	15 4 9	..	..	7 14 4	8 0 9
Nana ..	..	..	..	..	10 0 0	7 14 0
Honne ..	15 0 8	14 4 11	..	..	11 8 6	10 14 11
Sissum ..	18 13 0	17 12 8	8 1 3	12 14 7	11 10 6	..
Heddi ..	..	..	..	..	6 3 5	5 1 3
Karimuthal ..	..	..	..	..	16 6 10	13 6 3
Other jungle woods	..	..	..	..	..	..
Teak battens ..	..	..	..	..	18 8 4	13 11 9
Teak scantlings ..	..	..	..	..	19 14 0	15 2 8
Teak planks ..	..	..	..	..	25 13 3	22 0 1

There is at present very little demand for the sawn timber held in stock at Nasik as the market is overstocked with material from Peint much of which is derived from the thinning coupes. In order to stimulate the demand for the sawn material, it has been decided to withhold the purely silvicultural operations of the Peint Working Plan for two years, 1935–36 and 1936–37.

There was no improvement in the timber market and the sales at Dandeli, Kodibag and Hattikeri Depôts recorded a small drop over the prices realised last year.

Firewood Depôts.—All depôts were worked by contractors in the Northern and Central Circles. The depôt at Igatpuri in the East Thana Division will be closed on expiry of the current contract period as a number of private depôts have been opened there. The depôts at Mahableshwar and Matheran were worked departmentally and the one at Panchgani by a contractor.

Mechanical extraction and Government sawmills are dealt with in Chapter IV-A.

Private sawmills.—The private sawmill of Mr. Sayad Nasrodin Hasansab at Katur in Kanara Eastern Division turned out 2,490 M.G. sleepers and 17,000 cft. of sawn material as against 13,575 cft. of sawn material in the previous year.

(ii) Purchasers.

The following table compares the outturn of major and minor produce removed by consumers and purchasers during the years 1934–35 and 1933–34 :—

Circle.	Year.	Major Forest Produce.				
		Timber.		Fuel.		Sandal-wood value.
		Cft. in thou-sands.	Value.	Cft. in thou-sands.	Value.	
			Rs.		Rs.	Rs.
Northern ..	1934–35 ..	2,618	12,04,670	6,735	25,155	..
	1933–34 ..	2,805	12,85,006	8,946	21,210	..
Central ..	1934–35 ..	1,543	4,52,241	5,602	63,364	..
	1933–34 ..	1,239	3,91,292	4,886	58,774	..
Southern ..	1934–35 ..	1,609	3,81,103	6,719	1,76,332	..
	1933–34 ..	1,630	2,86,131	5,051	1,79,189	..
Sind ..	1934–35 ..	360	84,975	20,617	4,64,500	..
	1933–34 ..	267	67,918	20,428	3,54,125	..
Total ..	1934–35 ..	6,130	21,22,989	39,673	7,29,351	..
	1933–34 ..	5,941	20,30,347	39,311	6,13,298	..

Circle.	Year.	Minor Forest Produce—*contd.*			
		Bamboos, value.	Grass and grazing, value.	Other minor produce, value.	Total value.
		Rs.	Rs.	Rs.	Rs.
Northern ..	1934–35 ..	6,937	1,87,964	27,268	2,22,169
	1933–34 ..	17,144	1,83,002	29,506	2,29,652
Central ..	1934–35 ..	17,424	4,16,081	34,547	4,68,052
	1933–34 ..	15,330	3,97,055	35,291	4,47,676
Southern ..	1934–35 ..	70,152	89,488	30,579	1,90,219
	1933–34 ..	62,149	87,949	36,715	1,86,813
Sind ..	1934–35 ..	....	56,900	14,769	71,669
	1933–34 ..	....	56,750	15,857	72,607
Total ..	1934–35 ..	94,513	7,50,433	1,07,163	9,52,109
	1933–34 ..	94,623	7,24,756	1,17,369	9,36,748

In the Northern Circle the decrease both in the value and volume under timber was due to less number of thinning coupes than in the previous year having been sold in the 3 Thana Divisions. The decrease in the volume of fuel was due to the same reason while the increase in value thereof was due to the sale of fuel trees in woodland plots given out for cultivation in the North Thana Division. The increase under grass and grazing was due to better prices realised for grass kurans in the North Thana and West Nasik Divisions. The decrease under bamboos and other minor produce was mainly due to the fact that revenue for the Dangs up to the date of its transfer to the Government of India was included in the figures for the previous year.

In the Central Circle the increase in the value and quantity of timber and fuel was due to keen competition for coupes which resulted in the realization of good prices in East and West Khandesh and Kolaba Divisions. The increase under bamboos was due to the fact that Forest Settlers in the Satpudas were allowed a concession of paying $\frac{1}{2}$ and $\frac{1}{4}$ the usual rate for bamboos in order to help them after an unsatisfactory harvest and this resulted in the removal of greater number of bamboos than last year. Good prices obtained for kurans in the Poona and East Khandesh Divisions and increased collection of grazing fees were responsible for the increase under grass and grazing.

In the Southern Circle the increase in the value of timber was due partly to the better quality of the coupes sold in the Kanara Northern Division and partly to the keen competition among purchasers. The dullness of the fuel market is reflected in the fact that although the quantity removed was considerably in excess of that of the previous year, the value dropped by Rs. 2,857. Some improvement in the demand for bamboos was responsible for the rise in value under bamboos. The increase under grass and grazing was due to recovery of arrear grazing fees from defaulters of the previous year in the Dharwar-Bijapur Division. The decrease under other minor produce was due to very poor prices realised for farms in the Kanara Eastern and Belgaum Divisions, particularly the *hirda* farm in the latter Division.

In the Sind Circle the increase in outturn and value of timber and fuel was due partly to disposal of previous years' coupes and partly to better prices realised for coupes, deadwood and thinning contracts. The decrease under other minor produce was due to less realisations from *babul* pod and kanh and sar grass contracts.

(iii) Rights, Privileges and Free Grants.

The following is a comparative statement of the quantity and value of forest produce removed by right and privilege holders and free grantees during the years 1934–35 and 1933–34 :—

Circle.	Agency.	Major Forest Produce.				Minor Forest Produce.			
		Timber.		Fuel.		Bamboos, value.	Grass and grazing, value.	Other minor produce, value.	Total value.
		Cft. in thousands.	Value.	Cft. in thousands.	Value.				
			Rs.		Rs.	Rs.	Rs	Rs.	Rs.
Northern ..	C	..	..	4,679	92,668	25,860	4,65,124	27,074	5,18,058
	F	7	3,484	...	..	9	..	190	199
Central ..	C	1	780	10,562	2,15,815	662	42,114	4,158	46,934
	F	20	9,977	2	52	608	1,287	3,373	5,218
Southern ..	C	300	72,000	3,000	37,500	45,000	2,84,339	20,000	3,49,339
	F	54	15,165	3	36	843	5,405	1,952	8,200
Sind ..	C	1	120	15	120	..	6,975	..	6,975
	F	19	1,961	2	60	..	21,061	56	21,117
Total ..	C	302	72,900	18,256	3,46,103	71,522	7,98,552	51,232	9,21,306
	F	100	30,587	7	157	1,460	27,703	5,571	34,734
Total of 1933–34.	C	304	73,442	8,221	1,54,320	50,183	8,35,726	36,453	9,22,362
	F	113	31,060	12	551	4,310	26,246	2,697	33,253

C = Concessionists. F = Free grantees.

The only recognised rights are those of way. Privileges were enjoyed as usual by the villagers under settlements, local rules and other Government orders. Free grants of timber and other produce were made in deserving cases for reconstruction of houses burnt by fire, for repairs to buildings and for domestic and agricultural purposes. Large grants of timber were made in the Kanara Western Division for rebuilding houses burnt by fire in the Gersappa village.

Owing to the scarcity of fodder caused by the dearth of rain in the earlier part of the season the forest villagers in the Nandgaon and Malegaon talukas of Nasik District were allowed, with the sanction of the Commissioner, the concession of removing *anjan* leaves free for fodder. The date of recovery of grazing fees was also extended up to the end of October in the case of Malegaon Taluka and up to the end of December in the case of Nandgaon and Baglan talukas. The concession of free removal of *anjan* leaves was for the same reason granted to some villagers in Dhulia Range of the West Khandesh Division and some kurans were thrown open to grazing in that Division.

(c) Outturn and Sources of Forest Produce.

The outturn from all sources of forest produce during the two years 1934-35 and 1933-34 compares as follows :—

Circle.	Year.	Major Forest Produce.			Minor Forest Produce.		
		Timber c. ft. in thousands.	Fuel c. ft. in thousands.	Sandal wood Value.	Bamboos Value.	Grass and grazing Value.	Other minor produce Value.
				Rs.	Rs.	Rs.	Rs.
Northern ..	1934-35 ..	2,774	11,999	..	32,967	6,53,038	54,533
	1933-34 ..	2,909	13,306	..	22,286	6,83,322	39,521
Central ..	1934-35 ..	1,571	16,704	1,920	18,694	4,59,432	43,370
	1933-34 ..	1,275	6,456	3,007	18,395	4,43,464	45,605
Southern ..	1934-35 ..	2,676	9,722	1,00,596	1,15,995	3,79,232	52,603
	1933-34 ..	2,766	8,057	1,02,931	1,08,587	3,75,645	57,903
Sind	1934-35 ..	385	20,700	..	..	84,936	15,465
	1933-34 ..	302	20,455	..	..	84,296	16,361
Total ..	1934-35 ..	7,406	59,125	1,02,516	1,67,656	15,76,688	1,65,971
	1933-34 ..	7,252	48,274	1,05,938	1,49,268	15,86,728	1,59,390
Difference ..		+154	+10,851	—3,422	+18,388	—10,040	+6,581

The total expenditure on management of State Forest was :—

Circle.	1934–35.	1933–34.
	Rs.	Rs.
Northern	1,41,092	1,55,775
Central	77,379	73,534
Southern	6,60,987	7,40,070
Sind	24,870	25,851
Total ..	9,04,328	9,95,230

The decrease was due to curtailment of departmental works in favour of sales of standing trees and reduction in the rates of extraction and labour in the Southern Circle.

CHAPTER IV-A.

THE FOREST ENGINEERING BRANCH.

The forest engineering branch carried out the following works during the year :—

1. Surveys.

	Project.	Locality.	Nature of work.
1.	Bhanwad-Mankhed Road	West Nasik Division	Survey.
2.	Mulchand deviation	Dangs, Surat	Final realignment for construction.
3.	Drainage works	Do.	Survey.
4.	Tube wells	Belgaum Division	Do.
5.	Gunje-Shiroli Road	Do.	Do.
6.	Kadra-Shivpur Road	W. D. Kanara	Survey for renewal of culverts.
7.	Suspension bridge	Do.	Survey.

2. Designs and Drawing work.

1.	Ozar-Saiwan Road		Project submitted to Government.
2.	Temba-Parali Road	East Thana	Project completed.
3.	Causeway over Chiktya nala.	Dangs, Surat	Plans and estimates prepared and supplied.
4.	Mulchand deviation	Do.	Do.
5.	Kudkas bridge over the Khapri River on Waghai-Ahwa Road.	Do.	Final plans and estimates supplied.
6.	Rest house and outhouses at Ambe.	West Nasik	Plans and estimates.
7.	Rest house and outhouses at Vani.	Do.	Do.
8.	Culverts on Kadra-Shivpur Road.	W. D. Kanara	Plans and estimates for construction.
9.	Well at Arbail	Do.	Plans and estimates.
10.	Causeway over Masti nala on Katur-Chipgeri Road.	E. D. Kanara	Do.

In addition to the above, plans and estimates for various Forest buildings were supplied to the several Divisional Forest Officers. Special standard designs for garages and outhouses of a new type were also prepared.

3. Construction.

No construction work was allotted to this branch during the year, but supervision of various works in progress was carried out for the Divisional Forest Officers.

Repairs to the quarters of the Engineering staff, storeshed and the water reservoir at Dandeli were carried out at a total cost of Rs. 99.

4. Forest Exploitation.

(*a*) *Mechanical extraction.*

Timber extraction work was done in compartment 27 of Block XI, Nagzari Valley with the Fordson skidder from 9th November 1934 to 29th January 1935 and from 14th April 1935 to 16th May 1935. The total output was 885·19 tons as against 251·38 tons in the last year while the cost of extraction, including overhead charges, was Rs. 8–1–0 per ton with a mean length of haul of 1,135 feet and maximum length of haul of 2,250 feet as against Rs. 19–13–0 per ton with a mean length of haul of 2,210 feet and maximum length of haul of 3,000 feet in the last year.

The large output is due chiefly to the larger number of working days combined with longer working hours and lesser lead than in the previous year while the decrease in the extraction cost is due partly to larger outturn and partly to the reduction of overhead charges from Rs. 6–10–5 to Rs. 2–8–4 per ton.

Under a special agreement the Fordson outfit together with the skidding staff was loaned to Mr. S. M. Borker, a Forest contractor, for hauling logs from compartment No. 32-A of Block 26, W. D. Kanara, on condition that he paid annas four per khandi of timber extracted, to cover cost of establishment, stores, departmental charges and depreciation. In all the skidder hauled 600 logs (322·2 tons) in 46 working days with a mean haul of 1,806 feet, for which Rs. 2,342–2–11 were received from the Contractor, the net profit to the department being Rs. 322–3–2.

This is the first time in which a contractor got the hauling work done by the Fordson skidder and his action, it is hoped, will encourage other contractors to adopt modern methods of exploitation.

The animal winch was not worked during the year.

(*b*) *Sawmilling.*

1. *Preliminary.*—The following sawmills were worked departmentally in the Southern Circle, during the year :—

(1) The mill at Dandeli in Kanara Northern Division.

(2) The mill at Mandurli in Kanara Northern Division.

(3) The mill at Kirwatti in Kanara Eastern Division.

2. *General.*—The total output and average cost of conversion are given for the last 5 years in the sub-joined statement :—

Year.	Output of sawn material.	Average cost of conversion (stores, establishment and labour charges) excluding overhead charges.
	Cft.	
1930–31	326,450	4·48 annas per cft.
1931–32	332,616	4·16 „ „ „
1932–33	286,796	4·01 „ „ „
1933–34	195,760	4·36 „ „ „
1934–35	247,059	3·55 „ „ „

The sawmills at Mandurli and Kirwatti were responsible for both increase in the output and decrease in sawing costs, while the Dandeli mill showed lesser output with consequent rise in sawing costs.

3. *Deadstock and stores.*—The deadstock of all the sawmills was checked and unserviceable articles were either repaired or written off under proper authority. The total value of stores and articles of deadstock supplied to the mills was Rs. 779 and Rs. 11,602 respectively.

4. *Progress of sawmilling.*—The following table shows the outturn and average sawing charges incurred under the heads stores, labour and establishment, excluding overhead charges :—

Serial No.	Name of saw mill.	Output during the year.			Average sawing cost per cft.		
					Stores.		
		1932-33.	1933-34.	1934-35.	1932-33.	1933-34.	1934-35.
	Northern Circle.	Cft.	Cft.	Cft.	As.	As.	As.
1	Dangs sawmill	46,058	--	--	1·74	--	--
	Southern Circle.						
2	Dandeli sawmill	127,758	127,505	125,446	0·83	0·67	0·90
3	Foden Portable sawmill ..	43,642	15,467	Closed down.	0·75	1·69	Closed down.
4	Mandurli sawmill	9,355	16,792	62,524	0·76	1·14	0·68
5	Kirwatti sawmill	59,983	35,996	59,089	0·64	1·28	0·49
	Total for Presidency ..	286,796	195,760	247,059	0·92	0·90	0·75

Serial No.	Name of saw mill.	Average sawing cost per cft.						Total excluding overhead charges per cft.		
		Labour.			Establishment.					
		1932-33.	1933-34.	1934-35.	1932-33.	1933-34.	1934-35.	1932-33.	1933-34.	1934-35.
		As.	As.	As.	As.	As.	As.	As.	As.	As.
	Northern Circle.									
1	Dangs sawmill (*a*) ..	2·45	..	..	0·82	..	..	5·01	..	..
	Southern Circle.									
2	Dandeli sawmill ..	2·90	2·85	2·79	0·52	0·49	0·47	4·25	4·01	4·16
3	Foden Portable sawmill (*b*) ..	1·97	2·38	Closed down.	0·76	0·92	Closed down.	3·48	4·90	Closed down.
4	Mandurli sawmill ..	1·45	2·26	1·42	0·40	0·86	0·35	2·61	4·26	2·45
5	Kirwatti sawmill ..	2·39	3·58	2·26	0·30	0·57	0·70	3·33	5·43	3·45
	Total for Presidency ..	2·53	2·89	2·31	0·56	0·57	0·49	4·01	4·36	3·55

(*a*) This mill was transferred to Government of India from 1st July 1933.
(*b*) This mill was closed on 20th November 1933.

Sawmill Trading Accounts.—The outside audit branch of the Accountant General's office audited the trading accounts of the Dandeli mill and store account of the Forest Engineering branch for the year 1933-34.

The results of the working of the three sawmills are summarised as under :—

Items.	Dandeli mill.		Mandurli mill.		Kirwatti mill.	
	1933-34.	1934-35.	1933-34.	1934-35.	1933-34.	1934-35.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Revenue ..	2,75,005	2,31,854	19,065	83,022	53,301	81,828
Expenditure ..	1,78,974	1,41,449	16,240	43,864	43,519	55,908
Net profit ..	96,031	90,405	2,825	39,158	9,782	25,920
Capital at charge	1,56,918	1,10,380	27,691	40,959	21,509	38,436
Percentage of net profit on capital ..	61·2	81·9	10·2	95·6	45·5	67·4

All the sawmills show a total net profit of Rs. 1,55,483 as against Rs. 1,39,380 last year. The net profit of the Dandeli mill has, however, decreased from Rs. 96,031 to Rs. 90,405. The decrease is due to the drop in the average selling price realised for sawn material. The Mandurli and Kirwatti sawmills show an increase of Rs. 36,333 and Rs. 16,138 respectively over the profits earned last year and this is due to a greater quantity of sleepers and sawn material produced by the mills and consequent increase in the value of sales. In the case of the Kirwatti sawmill better prices were realised for sawn material in sales.

CHAPTER V.

FINANCIAL RESULTS.

(Forms Nos. 68, 69 and 70.)

The revenue and expenditure of the year compare with those of the last year and average of the previous quinquennium 1929-30 to 1933-34 as follows :—

Circle.	Year.	Revenue.	Expenditure.				Surplus or deficit.	Percentage of surplus to gross revenue.
			Conservancy, Maintenance, and Regeneration.	Forest capital outlay.	Establishment.	Total.		
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Northern	1934-35	15,91,193	1,21,411	21,330	5,61,128	7,03,869	8,87,324	55·7
	1933-34	17,00,864	1,44,012	31,971	5,87,425	7,63,408	9,37,456	55·1
	Average	20,12,531	2,59,307	77,838	6,71,238	10,08,383	10,04,148	49·9
Central	1934-35	11,30,681	82,994	8,155	5,83,291	6,74,440	4,56,241	40·3
	1933-34	10,48,727	75,308	7,103	5,87,114	6,69,525	3,79,202	36·2
	Average	10,27,620	80,688	14,079	5,77,429	6,72,196	3,55,424	34·6
Southern	1934-35	21,05,086	6,41,955	19,124	5,43,215	12,04,294	9,00,792	42·8
	1933-34	20,91,808	7,19,616	20,503	5,55,573	12,95,692	7,96,116	38·1
	Average	24,86,869	10,01,573	31,928	5,96,325	16,29,826	8,57,043	34·5
Sind	1934-35	7,02,708	17,996	6,874	2,98,847	3,23,717	3,78,991	53·9
	1933-34	5,85,186	21,554	4,306	2,94,599	3,20,459	2,64,727	45·2
	Average	5,26,323	28,699	4,720	3,02,362	3,35,781	1,90,542	36·2
General Direction.	1934-35	96	97,685	13	63,444	1,61,142	—1,61,046	..
	1933-34	16	97,527	..	68,348	1,65,875	—1,65,859	..
	Average	14	1,09,930	42	76,532	1,86,504	—1,86,490	..
Forest Engineering.	1934-35	3,986	13,331	—767	35,412	47,976	— 43,990	..
	1933-34	3,489	18,392	99	52,917	71,408	— 67,919	..
	Average	1,038	25,863	— 2,557	50,348	73,654	— 72,616	..
Total Presidency.	1934-35	55,33,750	9,75,372	54,729	20,85,337	31,15,438	24,18,312	43·7
	1933-34	54,30,090	10,76,409	63,982	21,45,976	32,86,367	21,43,723	39·4
	Average	60,54,395	15,06,060	1,26,059	22,74,234	39,06,344	21,48,051	35·5
Difference between	1934-35 and 1933-34	+1,03,660	—1,01,037	— 9,253	— 60,639	—1,70,929	+2,74,589	..

N.B.—The above figures are exclusive of expenditure under B VI-(*a*)—Work advances—as this expenditure is recoverable.

The gross revenue of the year rose by Rs. 1,03,660 over the figure of the previous year but was less by Rs. 5,20,645 than the average of the preceding five years. The surplus shows an increase of Rs. 2,74,589 and Rs. 2,70,261 as compared with the previous year and the average of the previous quinquennium. The increase is shared by the Central, Southern and Sind Circles but is partly counterbalanced by a decrease in the Northern Circle.

The main causes for the increase in revenue are :—

(1) better prices realised for coupes and compartments sold standing in the Central and Southern Circles and for deadwood and thinning contracts in the Sind Circle,

(2) increased quantity of material supplied to the Madras and Southern Mahratta Railway,

(3) sale of Gund timber, and

(4) increased collection of grazing fees, which included a considerable amount of previous outstandings of the Southern Circle.

The decrease in the Northern Circle is due partly to the fact that the number of thinning coupes sold in the Thana Divisions was far less than in the previous year and partly to the fact that the revenue pertaining to the Dangs (since transferred to the Government of India) for a part of the previous year was included in the figures of that year.

The fall in expenditure under B-Conservancy, Maintenance and Regeneration is mainly due to curtailment of departmental works and reduction in the rates of extraction and labour in the Southern Circle and to the transfer of the Dangs to the Government of India from 1st July 1933.

The expenditure under 52-A depends upon the programme of new work sanctioned each year and the decrease was due to restricting the expenditure to urgent items only.

The decrease in expenditure under C-Establishment is partly due to the absence of officers of the Indian Forest Service on leave, their charge being held by officers on lower pay, and partly to the cost of the establishment in the Dangs being borne by the Government of India.

The analysis of the receipts and expenditure shows that of the receipts 76 per cent. came from major produce, 17 per cent. from minor produce and 7 per cent. from miscellaneous sources; while of the expenditure 33 per cent. was spent on extension, constitution, improvement and exploitation of forests and 67 per cent. on administrative, executive and protective charges.

The expenditure incurred from the provision under "52A Capital outlay on forests" subsequently charged to Revenue is as shown below :—

Heads.	General Direction.	Forest Engineering.	Northern Circle.	Central Circle.	Southern Circle.	Sind Circle.	Total.
I—Surveys ..	..	..	..	..	..	..	..
II—Organization, Improvement and Extension ..	..	..	1,177	4	473	541	2,195
III—Communications and Buildings ..	..	..	18,251	7,343	18,344	5,492	49,430
IV—Railways and Tramways ..	..	..	..	..	..	..	..
V—Deadstock, stores, tools and plant ..	13	99	1,902	811	581	841	4,247
Deduct—Receipts and recoveries on Capital account ..	..	—866	..	—3	—274	..	—1,143
Total ..	13	—767	21,330	8,155	19,124	6,874	54,729

The outstandings on account of revenue at the commencement and close of the year were :—

Circle.	On 1st April 1934.	On 31st March 1935.
	Rs.	Rs.
Northern	61,263	42,568
Central	8,468	11,636
Southern	1,38,226	1,54,500
Sind	1,37,419	1,85,602
Total ..	3,45,376	3,94,306

A sum of Rs. 679 was written off under proper authority in the Southern Circle.

The outstandings on account of contractors and disbursers were as follows :—

Circle.	On 1st April 1934.	On 31st March 1935.
	Rs.	Rs.
Northern	30	115
Central	20	253
Southern	23,112	7,292
Sind	733	663
Total ..	23,895	8,323

G. P. Z. P. 1935. Typical *Neem (Melia Azadirachta)* plantation $1\frac{1}{2}$ year old in the dry forest of Bagalkot Range. Block II, Coupe 12, Dharwar-Bijapur Division.

A sum of Rs. 3,071 was written off as per Government Resolutions, Revenue Department, Nos. 8902/28 dated 23rd April 1934 and 3216/33 dated 19th December 1934.

CHAPTER VI.

RESEARCH AND EXPERIMENTS.

Under the direct control of the Chief Conservator's Office, there were 11 subjects under investigation during the year while problems of purely local interest were taken up for investigation by the Divisional Forest Officers concerned under the general control of their Conservators.

The work done and observations made are briefly described below :—

NATURAL REGENERATION.

Sandal (Santalum album).

Subject No. 28.—Effect of early burning on sandalwood growth and regeneration (Belgaum).

On the suggestion of the Silviculturist, Dehra Dun, 100 sandal plants in each of the plots 28-A rigidly fire protected and 28-B, early burnt every year, are under observation in the Belgaum Division since the year 1933, the object being to confirm the results obtained in the original experiment.

The original measurement of trees in these plots in this second investigation were taken in December 1933 and the 1st remeasurement in December 1934.

The trees in each plot have been classified into 1″ girth and 3′ height classes from which the following results have been worked out :—

	Plot A. (Fire protected.)	*Plot B.* (Early burnt.)
Average girth at original measurement ..	4·97″	5·59″
Average girth at remeasurement ..	5·60″	5·65″
Average height at original measurement ..	12·12′	12·27′
Average height at remeasurement ..	12·66′	12·84′

There is no significant difference in the average height but in the average girth plot A shows an increase of ·57″ over that of plot B. The Divisional Forest Officer, Belgaum, remarks that the regeneration in plot A is more profuse than in plot B, but in view of the fact that late fires cause extensive damage to plantations early burning more than compensates for the difference in the intensity of regeneration between the early burnt and unburnt plots as it prevents late fires.

ARTIFICIAL REGENERATION.

Rosha grass (Cymbopogan martinii).

Subject No. 12.—Artificial propagation of *rosha* grass (West Khandesh Division).

In the belief that *rosha* requires 3 years to establish itself, it was ordered that this plantation should be kept under observation for a period of 3 years from 1932. The Divisional Forest Officer's report however shows that there has been no progress in the spread of *rosha* grass in this plantation and he estimates the present stocking at 9¼ annas. He is of opinion that the grass required to be cut back annually to encourage its further spread. This theory however is difficult to accept as cutting naturally prevents seeding. However, to complete the period of 3 years, the Divisional Forest Officer has been ordered to put up the grass for sale, next year, and report the revenue realised therefrom. No further experiments will be carried out.

Hirda (Terminalia chebula).

Subject No. 13.—Propagation of *hirda* (Poona and Satara Divisions).

The results of experiments conducted in the Poona and Satara Divisions to test whether " stump planting " of one year old nursery seedlings would be a more successful means of propagating *hirda* artificially than direct sowings or transplanting entire seedlings, are given below :—

(Poona Division.)

Number of stumps planted in June 1933 ..	605	
Survivals in January 1934	598	
Survivals in October 1934	572	
Survivals in February 1935	468	
Percentage of survivals	77·3	per cent.

The above figures indicate very satisfactory results in spite of severe frost in January 1935 when 104 plants are said to have been killed.

Direct sowing of seed gives a low percentage of germination, and the majority of the resultant seedlings succumb to the depredations of crabs, peafowls, squirrels, etc. The method of planting stumps cut from one year old nursery seedlings therefore appears to be particularly suitable for the artificial reproduction of *hirda* provided the locality is a suitable one.

(Satara Division.)

Experiments on the same lines were ordered to be conducted in the Satara Division, but as the seedlings raised in the nursery were too small for stump planting in the succeeding monsoon, they were ordered to be planted in the monsoon of 1934, i.e. when the plants were 2 years old. This was done with 153 stumps, out of which 58 are reported to have been surviving at the end of January 1935, the percentage of survivals being 38 per cent.

Khair (Acacia catechu).

The seedlings raised in the North, East and West Khandesh Divisions were utilised for stump planting in the rains of 1934, the percentage of survivals being 26,76 and 5 per cent., respectively.

Thinnings and Cleanings.

Subject No. 4.—Effect of thinning on teak coppice at different ages (East Thana Division).

Remeasurements in plots 4A1, 3, 5 and 7 were taken in December 1934. The Divisional Forest Officer, East Thana, has made the following observations in connection with this experiment :—

(1) The growth is slower where 3 or more shoots are retained per stool than in the case of one or two shoots per stool.

(2) Where there are 3 or more shoots per stool, the dominant shoot or shoots show better growth in girth whereas the suppressed shoots have not put on any growth or in many cases are killed by suppression.

(3) Where more than two shoots per stool are retained the dominant shoots in most cases have put on 1 to 2 inches of girth increment.

(4) Where single coppice stems of seedling plants are retained the growth observed in most cases is 2 to 3 inches in girth increment.

The obvious deduction is therefore that unnecessary shoots should be cut down and only one shoot retained.

Remeasurements in plots 4B2, 4, 6 and 8 are due in January 1936.

Subject No. 5.—Effect of different degrees of thinnings in teak plantations of different ages (West Nasik and West Thana Divisions).

There is nothing to record as the question of abandoning these plots is under consideration.

Subject No. 34.—Effect of different degrees of thinnings in teak plantations (Kanara, N. D., E. D., and W. D.).

The first remeasurements in these plots are due in the year 1935–36.

Subject No. 6.—Increment of *babul* under different degrees of thinning (Hyderabad, Sind).

During 1934–35 an additional set of 9 half-acre plots was laid down in compartments 9 and 10 of Manjhand Forest in an even-aged *babul* crop which was regenerated in 1930. This crop was "avenue thinned" in 1932 (i.e., about half of the crop was clear-felled in alternate strips at intervals of 33′, the belts of trees being roughly 15′ to 20′ wide). The object of laying down these additional plots is to compare the different degrees of thinning according to the new Sind method (in which regular spacing within certain limits is laid down). Under the advice of the

Silviculturist, Forest Research Institute, Dehra Dun, the first thinning in the belts was done to the same degree, so that the initial measurements would be comparable for all plots. The records along with the records of measurements taken in the original ten plots are being submitted to the Imperial Silviculturist for computation.

The thinning of the old set of 10 plots will be done again in November 1936 according to the Dehra Dun method of thinnings (A, B and C grades). The new 9 plots will probably be thinned at intervals of 2, 3 and 4 years, respectively, and in three different degrees. The crops themselves will determine the exact details.

Miscellaneous.

Sandal.

Subject No. 7.—Girth increment of sandal (Belgaum and Dharwar-Bijapur Divisions).

The 3rd remeasurements in the sample plots in the Belgaum Division were taken in May 1934.

Subject No. 32.—Correlation existing between the outer girth increment and heartwood increment of sandal (Dharwar-Bijapur Division).

Diameter measurements of all trees in the plot at Tadas were taken and recorded but readings with a Pressler's borer in this plot remained incomplete.

Bahan (Populus euphratica).

Subject No. 10.—Economic age for cutting *bahan* Vitality of coppice stools (Shikarpur Division).

Plot 10 C was felled in the 2nd rotation and necessary data recorded.

The yield in the form of poles has been very low in all classes. It was noticed that many stumps had not coppiced at all, due, it is believed, to the charring of the stumps which occurred when the branchwood was burnt.

Plot 10 D is due for felling in the next year.

Miscellaneous Species.

Subject No. 16.—Effect of improvement fellings on diameter growth (Dangs, Surat). (Teak and important junglewoods.)

During the year the numbers and cross marks on the trees were renewed. The next remeasurement is due in December 1936.

Experiments carried out by the Divisional Forest Officers.

In order to reduce the fire hazard occasioned by a heavy growth of grass on old cultivation and deserted village sites in the Tansa catchment

area in Thana, where destructive fires are an annual occurrence, a preliminary experiment was undertaken to discover whether *Bauhinia racemosa* is sufficiently fire resistant to serve as a suitable species for raising a crop of trees in such open areas to keep down the growth of grass.

A plot of one acre was selected, ploughed and sown with *Bauhinia racemosa* seed in furrows 6 feet apart; germination commenced early and, apart from weeding once during the monsoon, no further attention was given to the plot. At the end of May 1935, the survivals were estimated to be about 50 per cent., the seedlings being about 6″ in height.

Eucalyptus seed was sown at Matheran in November and the germination was very good. The plants at the end of the fair season were up to 4 feet in height. It remains to be seen how they stand transplanting.

Experiment on regeneration of sandal in coupes 1 and 2 of Block XIX by agri-cum-forestry system—Belgaum Division, Jamboti Round.

Two plots 15 acres each in extent were laid out, one in coupe No. 1 and the other in coupe No. 2, in a thickly lantana infested area in Block XIX of the Jamboti round with the object firstly of checking the growth of the lantana and secondly of raising by means of the agri-cum-forestry system valuable tree species, especially sandal, in the area cleared.

Five species were selected, viz. *Santalum album*, *Cassia siamea*, *Pterocarpus marsupium*, *Dalbergia Latifolia* and *Pongamia glabra* and the seed of all five were sown in small patches 10 feet apart throughout the length and breadth of the plots, with *nachna*, the field crop, in the intervening spaces.

Particular attention was bestowed on the sandal regeneration as the other species were sown chiefly for providing host plants within easy reach of sandal seedlings. The figures of survivals given below therefore refer to sandal only. Sowing commenced on the 11th June when optimum conditions prevailed and germination was successful to nearly 95 per cent. Immediate steps were taken to replace casualties and the plantation promised to be a cent per cent., success till February 1935 when the abnormal long spell of hot wheather caused large numbers of the plants to wilt and die off till in June 1935 the number of survivals was 1,448 and 1,489 out of 4,828 and 5,320 in the plots in coupes Nos. 1 and 2 respectively. It is proposed to complete the stocking of blanks in these plots next year as there will be sufficient coppice growth on the ground to provide natural shade to the seedlings.

Regeneration of teak and sandalwood on agri-cum-forestry system, tried in Patne Round, is reported to be a failure, chiefly due to unfavourable climatic conditions. The experiment has therefore been discontinued.

Experiments were carried out in the Kanara Eastern Division in respect of early sowing of teak and certain junglewood species. The results obtained are given below :—

Early sowing of teak.

Compartment XVI-12A. B.

Date of dibbling.	Kind of seed.	No. of raked patches dibbled.	No. germinated on 30th June 1934.	Percentage of germination.	Remarks.
15th April 1934 ..	A	1,165	1,009	86·6	"A"=High forest teak seed soaked in pits for 7 days and then dried, only one process.
	B	1,139	1,012	88·8	
30th April 1934 ..	A	1,480	769	51·7	
	B	1,600	1,053	65·8	"B"=High forest teak seed alternate wetting and drying for 24 hours, repeated 7 times.
15th May 1934 ..	A	1,402	558	39·8	
	B	688	256	37·2	
17th May 1934 ..	A	851	227	26·7	Rainfall on April 9th, 11th, 13th and 21st May 14th.
	B	866	259	30·0	
					Monsoon showers began on 12th June.
					On each patch 5 seeds were dibbled and a patch is taken as the unit.

Sowing of junglewood species.

XVI-12 A.B.

Species.	No. of patches sown.	No. alive on 20th February 1935	Average height on 20th February 1935.
Honne	32	25	2″
Sissum	37	26	3″
Shivni	40	35	25·4″
Karimuttal	60	59	7·7″

In each patch 10 to 12 seeds were put in and covered lightly. *Honne* seed was subjected to soaking in cold water for 24 hours before dibbling and other seeds underwent no treatment. The seed dibbled gave 100 per cent. germination.

Experimental plantations of *tali* and mulberry in the Larkana Division continue to thrive. Cleanings were carried out in the 1933–34 plantations with a minimum spacing of 10 feet which however proved to be excessive. During the year two more plots, one of 2½ acres in Bahaman forest and the other 5 acres in Kasim Shah forest were sown with *tali* and mulberry. The result in Bahaman forest was excellent, while that in the Kasim Shah forest was unsatisfactory due to late sowing and inadequate water supply.

Most of the exotic species planted in the Rahuja experimental garden and elsewhere in Sind showed no signs of resistance to frost and had to be cut back again during March 1935, the species that escaped damage being *Bombax malabaricum* and *Ougeinia dalbergioides*. It is not believed that *Shivan* can ever succeed in upper Sind as it shows no resistance to frost. Seeds of 10 species from the Presidency proper were sown in the Miani garden in the Hyderabad Division as an experiment. Only *Acacia catechu* has survived the severe frost of January 1935 and all the rest were completely killed. Transplants of *Hardwickia binata* however continue to flourish.

Eradication of prickly pear by the introduction of Cochineal insects was continued in the Poona and Satara Divisions with the result that in certain forest areas the prickly pear has been completely destroyed by these insects. Similar good results were obtained in the Badami and Bagalkot Ranges where the insects are reported to have naturally spread to prickly pear areas in forest. It is reported that everywhere in the Satara Division dead and dying prickly pear is seen as a result of the attempts made by local bodies and the general public to eradicate the pest by this means.

CHAPTER VII.

ADMINISTRATION.

The office of the Chief Conservator of Forests was held throughout the year by Mr. C. E. L. Gilbert.

The following officers were in charge of Circles :—

Circle.	Name of Officer.	From	To
Northern ..	Mr. H. W. Starte ..	1st April 1934 ..	13th February 1935.
	Khan Bahadur S. N. J. Ratnagar.	14th February 1935.	18th March 1935.
	Mr. R. P. Dalley ..	19th March 1935 ..	31st March 1935.
Central ..	Mr. R. W. Inder ..	1st April 1934 ..	27th July 1934.
	Mr. C. E. L. Gilbert (in addition to his duties as Chief Conservator).	28th July 1934 ..	20th August 1934.

Circle.	Name of Officer.	From	To
Central—*contd.* ..	Khan Bahadur S. N. J. Ratnagar.	21st August 1934 ..	16th October 1934.
	Mr. D. B. Sothers ..	17th October 1934 ..	31st March 1935.
Southern ..	Mr. A. C. Hiley ..	1st April 1934 ..	21st March 1935.
	Khan Bahadur S. N. J. Ratnagar.	22nd March 1935 ..	31st March 1935.
Sind ..	Mr. J. B. T. Brooks..	1st April 1934 ..	31st March 1935.
Forest Engineering Branch.	Mr. T. K. Mirchandani.	1st April 1934 ..	30th November 1934.
	Mr. R. V. Alexandor.	1st December 1934 ..	31st March 1935.

The territorial Divisions were held by the officers named below :—

Division.	Name of Officer.	From	To
Panch Mahals ..	Mr. S. P. Pandya ..	1st April 1934 ..	31st March 1935.
North Thana ..	Mr. R. J. Smith ..	1st April 1934 ..	31st March 1935.
East Thana ..	Mr. E. K. Kotwal ..	1st April 1934 ..	31st March 1935.
West Thana ..	Mr. G. S. Singh ..	1st April 1934 ..	22nd December 1934.
	Mr. F. X. Saldanha.	23rd December 1934.	14th January 1935.
	Mr. G. S. Singh ..	15th January 1935 ..	31st March 1935.
East Nasik ..	Mr. V. A. N. Sausman.	1st April 1934 ..	31st March 1935.
West Nasik ..	Mr. H. P. W. Davis.	1st April 1934 ..	31st March 1935.
Working Plans, N. C.	Mr. H. W. Starte ..	1st April 1934 ..	13th February 1935.
	Khan Bahadur S. N. J. Ratnagar.	14th February 1935.	18th March 1935.
	Mr. R. P. Dalley ..	19th March 1935 ..	31st March 1935.
Gurcharan Officer, Thana.	Mr. F. X. Saldanha.	1st April 1934 ..	9th October 1934.
	Mr. G. S. Singh ..	10th October 1934 ..	9th December 1934.
	Mr. F. X. Saldanha.	10th December 1934.	31st March 1935.
East Khandesh ..	Mr. H. J. C. Millet ..	1st April 1934 ..	31st March 1935.
North Khandesh.	Mr. D. V. Phatak ..	1st April 1934 ..	13th March 1935.
	Mr. F. A. B. Coelho.	14th March 1935 ..	17th March 1935.
	Mr. V. N. Hasabnis.	18th March 1935 ..	31st March 1935.
West Khandesh.	Mr. F. A. B. Coelho.	1st April 1934 ..	31st March 1935.
Poona ..	Mr. R. A. Shirali ..	1st April 1934 ..	31st March 1935.
Kolaba ..	Mr. Y. R. Divekar ..	1st April 1934 ..	31st March 1935.
Satara ..	Mr. V. N. Hasabnis.	1st April 1934 ..	14th March 1935.
	Mr. W. de C. Walsh.	15th March 1935 ..	31st March 1935.
Working Plans, C. C.	Mr. J. A. Singh ..	1st April 1934 ..	28th December 1934.
	Mr. W. E. Pereira ..	29th December 1934.	15th January 1935.
	Mr. J. A. Singh ..	16th January 1935 ..	31st March 1935.
Kanara, N. D. ..	Khan Bahadur S. N. J. Ratnagar.	1st April 1934 ..	18th August 1934.
	Mr. E. A. Garland ..	19th August 1934 ..	17th October 1934.
	Khan Bahadur S. N. J. Ratnagar.	18th October 1934 ..	10th February 1935.
	Mr. E. A. Garland ..	11th February 1935..	31st March 1935.
Kanara, E. D. ..	Mr. J. Walker ..	1st April 1934 ..	5th May 1934.
	Mr. E. A. Garland ..	6th May 1934 ..	20th May 1934.
	Mr. J. Walker ..	21st May 1934 ..	31st March 1935.
Kanara, W. D. ..	Mr. E. T. C. Vas ..	1st April 1934 ..	22nd December 1934.
	Mr. K. S. Ghotgalkar.	23rd December 1934	2nd January 1935.
	Mr. A. D. Mufti ..	3rd January 1935 ..	31st March 1935.

Division.	Name of Officer.	From	To
Belgaum ..	Mr. V. S. Kanetkar..	1st April 1934 ..	29th October 1934.
	Mr. H. C. Holmes ..	30th October 1934 ..	31st March 1935.
Dharwar-Bijapur.	Mr. S. N. Kesarcodi.	1st April 1934 ..	6th July 1934.
	Mr. A. D. Mufti ..	7th July 1934 ..	1st September 1934.
	Mr. R. F. Sandeman	2nd September 1934.	31st March 1935.
Working Plans, S. C.	Mr. E. A. Garland ..	1st April 1934 ..	21st February 1935.
	Mr. A. C. Hiley ..	22nd February 1935.	21st March 1935.
	Khan Bahadur S. N. J. Ratnagar.	22nd March 1935 ..	31st March 1935.
Sukkur ..	Mr. N. C. Ramchandani.	1st April 1934 ..	31st March 1935.
Shikarpur ..	Mr. M. L. Khanna ..	1st April 1934 ..	31st March 1935.
Larkana ..	Mr. Abdul Rahim ..	1st April 1934 ..	31st March 1935.
Hyderabad ..	Mr. R. P. Dalley ..	1st April 1934 ..	9th March 1935.
	Mr. G. J. Ramchandani.	10th March 1935 ..	31st March 1935.
Karachi ..	Mr. E. S. B. Tavener	1st April 1934 ..	9th November 1934.
	Mr. J. Petty ..	10th November 1934.	31st March 1935.
Working Plans, Sind.	Mr. C. G. Abichandani.	1st April 1934 ..	31st March 1935.

Most of the Divisions changed hands owing to absence of officers on leave, transfer or deputation on military training.

Fifteen Divisions were held wholly by Imperial Officers and officers of Class I of the Bombay Forest Service, 6 partly by Imperial Officers and partly by officers of Classes I and II and 6 wholly by officers of Class II of the latter service.

At the close of the year the number of officers attached to Divisions as Assistants or Sub-Divisional Forest Officers was 9, of whom 1 belonged to Class I and 8 to Class II of the Bombay Forest Service.

Mr. R. R. Chaudhari, direct recruit nominated to the Bombay Forest Service Class I, returned to India after successfully undergoing the course of Forestry at the Edinburgh University and joined the Department on 21st April 1934 as probationary Deputy Conservator of Forests. Mr. G. G. Badlani, Ranger on Rs. 200, was promoted to Class II from 14th March 1935.

Mr. D. V. Phatak, an officer of Class II of the Bombay Forest Service, retired from service on 14th March 1935 after serving the Department for nearly 34 years.

SUBORDINATE AND CLERICAL ESTABLISHMENTS.

Two new Rangers, who successfully completed their training at the Madras Forest College, joined service during the year. Nine new recruits were selected for training in the Rangers' Course 1935-37. As one of the candidates failed to pass the test of physical fitness his nomination was cancelled. The other students, who satisfactorily went through the practical training, joined the College after the close of the year.

The Forest Class in the Northern Circle was conducted as usual by a Ranger for 6 months with 26 students, 10 from the Northern Circle, 10 from the Central Circle and 6 from Indian States. Of these, 23 passed the final examination, one died, while undergoing the course, after a brief illness, and two were sent back being unfit to follow the course either owing to inability or continued illness. In the Southern Circle 11 subordinates were deputed for a special course of training under selected Rangers and 8 came out successful.

Casualties and Punishments.

Particulars.	Northern Circle.	Central Circle.	Southern Circle.	Sind Circle.	Total.	
					1934–35.	1933–34.
1. Retirements ..	24	20	17	5	66	95
2. Deaths	9	9	9	5	32	43
3. Resignations	9	6	..	1	16	19
4. Degradations	16	17	..	9	42	33
5. Prosecutions	5	..	..	..	5	5
6. Dismissals	9	10	3	9	31	45
Total ..	72	62	29	29	192	240

The health of the forest staff was fairly good except in the bad climate areas where there was general sickness due to malaria.

The work of the protective and clerical establishments is reported to be on the whole satisfactory.

The pending cases of prosecution against three subordinates in the Northern Circle were decided during the year. A retired forest guard charged with misappropriation of grazing fees was convicted by the trying magistrate but was acquitted on appeal. A Forester who was charged with criminal breach of trust was convicted and sentenced to rigorous imprisonment for 8 months and to pay a fine of Rs. 50. A Ranger who was prosecuted on a charge of receiving illegal gratification was convicted and sentenced to pay a fine of Rs. 850; but on appeal to the High Court the conviction was set aside. He, however, continued to be under suspension on account of some other charges. The appeal of the Ranger in the Sind Circle filed last year was decided by the Court of Judicial Commissioner of Sind and he was sentenced to pay a fine of Rs. 500 with imprisonment till the rising of the Court.

Two forest guards, one from each of the East Thana and West Thana Divisions, were prosecuted under the Indian Penal Code and the Abkari Act and were convicted. Two more forest guards in the East Thana Division and one Forester in the Belgaum Division were also prosecuted for receiving illicit gratification but the cases are pending. A forest

guard in the Karachi Division, whose prosecution was ordered in 1932 and who was absconding, was arrested by the Police, tried under the Indian Penal Code and convicted and fined.

Mr. V. H. Sant, a Forester in the East Thana Division, was murdered on 21st May 1934 by three villagers who were believed to have started a forest fire. These persons were prosecuted and sentenced to undergo imprisonment for a term of 5 years. As the Forester met his death in the course of discharging his duty, a family pension of Rs. 10 was sanctioned to his widow and of Rs. 9 to his minor son.

Inspection and Tours.

The Honourable the Minister for Local Self Government paid a visit to Dandeli and other places in Kanara in January 1935. Mr. C. P. Jayawardhan, an officer of the Ceylon Forest Service, also visited Dandeli in November 1934 in order to acquaint himself with matters connected with forest activities in this Presidency.

The Chief Conservator toured in all the Circles of the Presidency. All Divisional Forest Offices were inspected by the Conservators. No irregularities of a serious nature were noticed except in the case of the East Nasik Division where it was noticed that an authorization had been wrongly issued permitting the removal of teak trees belonging to Government from a Jahagir village. The value of the trees cut is being recovered and suitable action has been taken to prevent a recurrence of the irregularity.

A serious case of theft and attempted theft of wood from forest in the Tatta Range was detected by the Divisional Forest Officer, Karachi, in the course of his inspection tour. The responsible forest contractor was ordered to pay Rs. 4,860 as royalty for the wood illicitly cut and removed. He has paid Rs. 4,798 up to now. The case was handed over to the C. I. D. for investigation. It has been taken to court but the result is still pending.

Civil Suits.

Northern Circle.—The appeal preferred by Khan Bahadur Isa Sadik Sadwa against the judgment in the case regarding resumption by Government of the forest lands given out to him for temporary cultivation in the Panch Mahals Division was dismissed with all costs. A fresh suit was filed by Mr. S. R. Ranade for a declaration of his right to cut teak trees in certain survey numbers of Pohi in the West Thana Division. The suit was dismissed with costs and the appeal filed against this decision was also dismissed with costs.

Central Circle.—The second appeal preferred by the Khot of Tise against the decision of the Thana Court (claiming a share in the revenue derived from grazing fees, etc.) was decided by the High Court, confirming the decree of the lower appellate court.

Southern Circle.—A fresh suit was filed against Government by Mr. N. K. Kulkarni of Gunji claiming damages for not issuing export

passes for a certain quantity of *hirda* in compliance with an injunction order from the Civil Court. Steps are in progress for defending this suit. The suit filed last year by Mr. Usmansab Sannababasab was dismissed. Out of the four appeals pending from last year one was decided in favour of Government and the others are still pending in the courts.

Land Revenue Administration.

The Divisional Forest Officer, West Nasik, continued to be in charge of the land revenue and excise administration of Peint taluka.

The excise and revenue administration of the Akrani Mahal and revenue administration of Pal and a few other villages in the East Khandesh District was as usual managed by the Forest Department. The Raisingpur Estate was managed by the Forest Department under the Court of Wards.

The administration of the four Forest Mahals, viz., Dandeli Kulgi, Virnoli in the Kanara Northern Division and Kirwatti in the Kanara Eastern Division was continued by the Forest Department.

Kumries.

The majority of the Kumri areas in the Belgaum Division were inspected and all reasonable complaints of the grantees were redressed. Proposals for disforestment of Kumri lands in this Division are in progress.

Village Panchayats.

The four panchayats (Ajminal, Hosur, Nilvani and Tattegeri) now in existence in Kanara Northern Division continued to function satisfactorily. The new panchayat at Alwalli in the Kanara Western Division is reported to have not yet commenced work nor collected the required funds. Of the old panchayats in this Division the panchayats of Chitrige, Halkar, and Holangadde undertook some planting work, the species planted being mango, *kari*, *hongal* and *cashew* nuts. Six of the panchayats are reported to have cleared some of the forest areas of thorny bushes and other noxious growth. The management of two panchayats—Valgalli and Kalkeri—Harodi—was unsatisfactory due to dissension among the committee members. These two panchayats have now been amalgamated in order to remove the cause of friction between them.

CHAPTER VIII.

GENERAL REMARKS.

The financial results of the period under review were better than those of the previous year. The timber coupes in the Northern Circle commanded better prices and the timber market in the North of the Presidency showed a steady improvement. The fuel and charcoal market in the Central and Sind Circles also showed considerable

improvement. In the Southern Circle, however, although the net surplus was greater than that of last year, there was no appreciable improvement in the timber trade. In fact there was a drop in the prices realised at all the sale depots except Kirwatti. Goa contractors, who are normally the chief customers for *matti* and *sissum*, did not attend the Coast sales, while the prices realised for sawn timber in the Dandeli Depot did not maintain the average level owing to the absence of some of the usual purchasers from the Nizam's State. Teak logs to the extent of about 700 tons were, however, disposed of from the Dandeli Depot either in retail sale or by supply to Railways at prices ranging from Rs. 100 to Rs. 128 per ton. These sales tended to neutralize the low prices realised in the auction sale. There was a heavy slump in the fuel market and the contractors had a bad year in spite of the fact that some fuel coupes in the Kanara Western, Belgaum and Dharwar-Bijapur Divisions were held back from sale.

A gratifying feature of the year's trade was the increase in business with the M. & S. M. Railway. 256 tons of teak sawn wood, 527 tons of teak logs and 25 tons of *matti* logs were supplied against 214 tons of teak sawn wood and 262 tons of teak logs in the previous year. 24,000 M. G. teak sleepers were also supplied over and above those due under the three years' contract, and an indent for 53,000 additional sleepers has also been received for compliance during 1935-36 at the enhanced rate of Rs. 3-8-0 per sleeper. Prospects of increased maintenance and constructional works on this Railway indicate that their future requirements for timber may increase.

Thana Gurcharans.—Forest Settlement proceedings in 5 villages are yet to be completed by the Gurcharan Officer. During the year this officer continued his educative work which consisted mainly in giving demonstrations of tahal cutting and in explaining to the agriculturists the nature of their privileges in reserved and protected forests. His efforts in these directions were mainly concentrated in the Dahanu, Bhiwandi and Bassein talukas. All gurcharans in which tahal was lopped in these talukas were closely inspected, the supply of and demand for tahal was studied and attempts were made to secure the co-operation of the agriculturists for the conservancy of gurcharans. Panchas were also selected for regulating the lopping of tahal and reporting offences. Two cases in which the tahal rules were contravened were detected ; the offender in one case was warned and in the other fined.

Forest Advisory Committees.—No meeting of the Committee was held either in the Thana District or in the Nasik District as no subjects were proposed for discussion. The Panch Mahals Committee met once but the consideration of the only proposal brought up had to be postponed as it was not raised in time.

One meeting was held in each of the West Khandesh, East Khandesh and Kolaba Districts. No questions of any importance were raised except in Kolaba where a non-official member made a suggestion to change the present period of collection of grazing fees. The suggestion was not accepted as it was not found feasible.

In the Southern Circle there were two meetings of the Committees, one in Kanara and the other in Dharwar. 11 subjects were proposed for discussion in the Kanara meeting. Of these, two concerned the personnel of the Committee. It was proposed that the village officers should give a chit confirming the status of agriculturist desiring to remove forest produce free. This proposal was adopted. Other questions arising from doubt and misunderstanding were satisfactorily explained.

Only one non-official member attended the meeting at Dharwar. Here the most important point discussed was the remission of grazing fees on stall-fed or plough cattle not going to forest for grazing. This point was held in abeyance pending decision by the Commissioner, Southern Division, of a question referred to him by the Collector.

Government have in their Resolution No. 3449/33, dated 22nd February 1935, appointed a Committee consisting of Mr. A. W. W. Mackie, C.I.E., I.C.S., Commissioner as Chairman, the Chief Conservator, one Conservator and three non-official members of the Legislative Council as members to consider the question of forest grievances. The Committee held its first meeting towards the end of the year under report.

Gun Clubs.—The scheme of organising gun clubs for protection of crops against wild pig made considerable progress. New clubs were started at Hulkopgalgi, Kalkeri and Alnavar in the Dharwar District and 278 pigs were killed by all the hunting parties under the control of the Agricultural Department. Three more clubs, one each at Sangmeshwar, Devikop and Bammigatti are reported to have been organized but they have not yet started to operate. By the end of the year 10 gun clubs, five in the Belgaum and five in the Dharwar District, had been organised and were in operation.

Hunting and shooting.—The revenue realized from shooting license fees was Rs. 8,415 as against Rs. 8,680 in the previous year.

The following table shows the number of animals killed in Government forests during the year :—

Animals.	Northern Circle.	Central Circle.	Southern Circle.	Total.
Tiger	..	11	33	44
Panther	10	26	37	73
Bison	..	..	15	15
Sambhar	..	8	8	16
Cheetal	..	8	7	15
Wild pig	4	44	*11	59
Wild dogs	..	..	1	1
Wild cats	2	1	..	3
Wild elephants	..	..	12	12
Bear	..	8	3	11
Barking deer	..	..	1	1
Nilgai	2	3	..	5
Bhekar (4 horned antelope)	1	3	2	6
Chinkara	2	2	..	4
	21	114	130	265

* In addition to this, 528 wild pigs were killed by villagers in Kanara and 278 by Gun Clubs in the Dharwar District.

G P Z. P 1935

Distribution of Jubilee Alms to Forest Settlers of East Khandesh Division.
Clothing and Jawari grain were distributed to the poor.

The Officer in Charge Pig Killing Campaign killed 20 pigs in the forests of the Poona Division. As stated in the last year's report, Mr. Piloba Dhondiba was allowed to kill pigs in the forests of the Satara Division and 20 pigs were shot by him.

Rewards paid by the Revenue Department in the Southern Circle for destroying noxious animals amounted to Rs. 861 as under :—

	Rs.
Wild elephant	650
Wild pig	191
Wild dogs	20

It is reported that for want of sufficient budget provision rewards for the full number of pigs killed in Kanara could not be paid.

All reserved forests in the Panch Mahals and Thana Districts and all reserved and protected forests in the Nasik District have now been brought under the Game Rules under Government sanction.

The scheme of two or more semi-game sanctuaries in each Division in Sind sanctioned by the Commissioner in Sind, about which mention was made in the last year's report, is being tried in Unarpur and Rajri forest in Hyderabad and Viran and Jurar in Karachi Division. The zamindars have agreed to maintain game watchers to prevent unauthorized poaching in these forests. It is too early to say whether there has been any increase in game as a result of this protection.

Forest cultivation and Forest Settlements.

The revenue realised on account of assessment on forest lands given out for cultivation in the Northern Circle amounted to Rs. 19,943. Government have ordered that the whole forest block of Zankaria in the Panch Mahals Division including the present inforest settlements and the area to be reserved for grazing should be disforested and that the area to be sold by auction for cultivation should be cleared by the Forest Department prior to disforestment. Some area has already been cleared and the remaining area will be cleared during the next 3 years. One new settlement was opened at Vaijapur and another is being opened at Janori in the East Khandesh Division. The latter settlement is intended for Mahars only. In the North Khandesh Division one new settlement was opened at Bhongara. In the West Khandesh Division numerous applications are being received for forest lands for cultivation. In order to meet this demand it has been proposed to open new settlements covering an area of 6,000 acres. The settlers' crops were on the whole poor, particularly in East and West Khandesh. The total collection of assessment for forest lands under cultivation in the Central Circle amounted to Rs. 32,075.

Alnavar Dandeli Railway.—The revenue and expenditure for the two years 1934-35 and 1933-34 are compared below :—

Year.	Receipts.	Expenditure.	Surplus or deficit.
	Rs.	Rs.	Rs.
1934-35	41,624	45,526	—3,902
1933-34	44,698	43,895	+803
Difference	—3,074	+1,631	

The net result of the working of the railway was a loss of Rs. 3,902 against the net profit of Rs. 803 in the previous year. The fall in the earnings is directly traceable to the decrease in goods traffic on account of less bamboo traffic from siding stations on this line. The expenditure rose on account of increase in cost of maintenance of structural works and in interest charges.

Grass storage under the 9-year monopoly contract.

The purchasers of the grass at Godhra and Dohad were not able to complete their contract within the time allowed and they were granted extensions till 31st December 1935. The former removed 1,00,000 lbs. of grass and the latter 4,00,000 lbs. The quantity on hand at close of the year was 14,30,820 lbs. at the Godhra Depot and 76,85,125 lbs. at the Dohad Depot.

The deficit amounting to Rs. 9,517 resulting from the resale of the grass at Dohad due to the default of the original purchaser was written off under Government sanction.

Match Factories.—The Gujarath Islam Match Manufacturing Company removed 200 cartloads of matchwood at the concession rate of 6 annas per cartload from the Panch Mahals Division. The concession granted to this Company expired on 31st May 1935.

Industrial Exhibition.—An Industrial Exhibition was held at Poona during the year under the auspices of the Lord Reay Industrial Museum. This Department was invited to co-operate and a forest stall was opened there displaying exhibits of various timbers and useful minor products found in the forests of this Presidency. A further exhibit showed the bad effects of uncontrolled grazing in forest. The display was well organised by Mr. J. Dutt.

Irrigated Plantation Scheme in Sind.

The Committee (consisting of the Inspector General of Forests, the Conservator of Forests, Sind Circle, one expert Forest Officer from the Punjab and the Divisional Forest Officer, Working Plans, Sind) appointed by the Government of India visited and examined the areas selected for the scheme for Irrigated Plantations in the Larkana and Shikarpur

Divisions. The Committee selected and recommended an area of 6,500 acres as being fit for inclusion in the scheme. The Government of India, however, after considering the recommendations of the Committee, have decided not to finance the scheme, as, in their opinion, it is one which the future provincial Government of Sind can take up on its own account when it comes into being.

Remarks of Divisional Commissioners on Circle Reports are given below :—

Commissioner, Northern Division (Mr. J. H. Garrett, C.S.I., I.C.S.) :—

The area under Forests in the Northern Circle decreased from 3,066 square miles to 3,064 square miles, i.e. by 2 square miles, which was disforested in favour of cultivation.

The number of forest offences increased from 8,121 in the previous year to 9,137 during the year under report, i.e. by 1,016 offences. The increase is classified as under :—

	Increase. / Decrease.
(*i*) Injury to forest by fire ..	—26
(*ii*) Unauthorized felling ..	+617
(*iii*) Unauthorized grazing ..	+263
(*iv*) Other offences	+162
	+1,016

The greatest increase, as will be seen from above, is under the head (*ii*). It is shared by all the Divisions but mainly contributed by the West Nasik Division and is attributed to the maintenance of register for recording offences reported by each subordinate as stated in the last year's report. Finding the Register to be useful it has been ordered to be maintained by other Divisional Forest Officers. The increase under head (*iii*) above is attributed to stricter supervision and greater vigilance on the part of subordinates and also to the maintenance of the register referred to above. It is shared to some extent by the North and West Thana Forest Divisions in the Northern Division.

90 new cases were taken to court during the year. 75 cases including 24 of the previous year were decided. Out of these 68 ended in conviction i.e. 91 per cent. ; of the 7,980 cases dealt with departmentally 7,823 cases were compounded, the amount of compensation recovered being Rs. 33,342 ; in the remaining 157 cases the offenders were let off with a warning. In 1,362 cases the offenders were not detected.

Though there is a decrease in the number of offences by fire, there is an increase in the area burnt by fire. The increase is shared by Panch Mahals, North Thana and East Thana Divisions. A certain amount of incendiarism was in evidence in the Panch Mahals where the long term contractors of grass and timru leaves are responsible for intentional fires. The accidental fires are mainly due to cattle thieves, a net work of roads, cart tracks and railway lines passing through the forest area. The

severe frost of February 1935 dried up the grass and thus rendered it inflammable in the North and East Thana Divisions. Five forest villages were warned for bad fire protection in the North Thana.

Grazing fees collected during the year under report amounted to Rs. 1,27,509 against Rs. 1,33,657 in the previous year. The decrease is due to the fact that the number of cattle admitted to grazing was less. This decrease is due to (1) migration of shepherds to Berar on account of shortage of fodder, (*ii*) prevalence of an epidemic among cattle in the West Thana Division and (*iii*) the Talukdari villages in the Panch Mahals, not availing themselves of the usual forest grazing area. The total number of cattle recorded as having grazed was 899,298 as against 986,370 in 1933–34.

The number of cattle impounded during the year under report was 39,007 as against 36,842 during the previous year. The increase is contributed to some extent by the East and North Thana Divisions and is attributed to strict supervision.

The frost caused a considerable damage to young teak saplings in the regeneration area.

The total revenue and expenditure fell from Rs. 17,00,864 and Rs. 7,62,958 to Rs. 15,91,193 and Rs. 7,03,820 respectively. This has resulted in a decrease of Rs. 50,533 in the surplus revenue from the working of forests during the year. The decrease in revenue is partly due to the fact that the figures for 1933-34 included the figures pertaining to the Surat Division (i.e., the Dangs and the Mandvi Range) for the period from 1st April 1933 to 30th June 1933 and partly to the fact that the number of second and third thinnings coupes sold in the Thana Division during 1933-34 was larger than in 1934-35.

Khan Bahadur Sadwa has preferred a second appeal against the decision of the Assistant Judge, Broach and Panch Mahals, and the Remembrancer of Legal Affairs is asked to obtain Government sanction to its defence.

General remarks.

The Collector of Broach and Panch Mahals is asked to submit a notification for disafforestation of the Forest lands at Zankharia (*vide* Government Resolution, Revenue Department, No. 2457/24, dated 13th December 1934).

As no subjects were proposed for discussion, no meeting of the Forest Advisory Committee was held in the Thana District. A meeting of the Forest Advisory Committee in the Panch Mahals was held on 20th October 1934 but no subject was discussed.

A Committee for enquiry into Forest grievances was appointed by Government under their resolution No. 3449/33, dated 22nd February 1935, under the Chairmanship of Mr. A. W. W. Mackie, now Commissioner, Central Division.

Rules regulating hunting and shooting have been applied to reserved forests in the Panch Mahals and Thana District.

The relations between the Forest and other Government Departments continued to be cordial.

Mandvi Range (Surat District).

At the suggestion of the Divisional Forest Officer, the entire area of the Mandvi Range is to be re-surveyed.

Construction of roads in the Range, though profitable, could not be taken up on account of financial stringency. The completion of the well at Kamalpur has supplied a long-felt want to the people.

An amount of Rs. 124–11–0 was spent in giving rewards to Patils in the Range, in the form of turbans in addition to remission of grazing fees for their good help in protection of forests against fire.

* * * * * *

The increase in revenue and expenditure in the Northern Division (paragraph 56 of the Conservator's report) is partly due to the fact that in the year 1933–34, the data for the Mandvi Range were for 9 months, July 1933 to March 1934 while during the year under report they are for the whole year.

With regard to the two grievances of the people, referred to in the Collector of Surat's remarks on the administration of the Range, it may be observed that Surat is not one of the Districts where village cattle of Forest villages are held entitled to free grazing and that even recently the Forest Settlement Officers in the case of Ambapore and other 51 villages, admitted only rights of grazing cattle *on payment of fees*, probably because, no rights of free grazing were exercised by the other forest villages similarly circumstanced. It will appear from Rule VII (I) (*i*) of the grazing rules that the privilege of free grazing was allowed to the Panch Mahals and other tracts because it was formerly enjoyed there.

Grievance (2).—The suggestion of the Collector may be adopted to remove the grievance.

Commissioner, Central Division (Mr. A. W. W. Mackie, C.I.E., I.C.S.):

* * * * * *

Rights, Privileges and Free Grants.

2. During the year under report free grants of timber were made to poor people in deserving cases for the construction of and repairs to houses and huts both in the Northern Circle and Central Circle. In the Central Circle such grants were also made for the construction of and repairs to temples, *etc.*, being works of public utility.

Forest Offences.

3. Hitherto it was the practice to append to the Commissioner's review a comparative statement showing the number and nature of forest offences committed during the year under review arranged by

districts in the Central Division. No such statement is appended to this review as the necessary information in connection with forest offences committed in each district has not been furnished this year either by the Conservator of Forests, Northern Circle or Central Circle.

It is, however, seen from the reports that though during 1934–35 there was a decrease of 378 in the total number of offences committed in the Central Circle, there was an increase of 1,016 in the Northern Circle. It is stated that the West Nasik Division was mainly responsible for the increase in the Northern Circle. The increase, in the West Nasik Division under the head "Unauthorized felling" is this year again attributed to the register maintained in the Divisional office for recording offences reported by each subordinate. Presumably the system did not produce its full effect in this direction last year. The increase under the head "Unauthorized grazing" in the East Nasik Division in the Northern Circle is attributed to stricter supervision and greater vigilance on the part of the forest subordinates while that in the West Nasik Division is attributed to the maintenance of the register referred to above.

The Conservator of Forest, Central Circle, states that no particular reason can be assigned to the decrease of 4·6 per cent., in the total number of forest offences committed in the Central Circle during the year under report. The Collector of Satara, however, reports that the decrease in the number of Forests offences committed in the Satara district was chiefly due to the co-operation of the villagers of Forest villages with Forest officers.

Prosecutions.

Out of the total number of 112 cases in the Central Circle 91 were decided during the year under review. Convictions were obtained in 80 cases as against 104 cases in the previous year.

Apart from this 6,181 cases were compounded in the Central Circle and brought in compensation amounting to Rs. 37,897.

The Conservator of Forests, Central Cirlce, has furnished a statement showing the number of cases tried in the Central Circle for forest offences separately for the 3 revenue divisions from which it is seen that there was a decrease in the number of cases for the Central Division under all the heads of forest offences, during the year 1934-35.

Protection from fire.

4. The total area burnt in the Central Division during the fire season ending 31st May 1935 was 359 square miles as compared with 472 square miles in the previous year. Though the total area burnt in the Northern Circle has increased during the year under report there is a decrease in the two Nasik Divisions coming under the Central Division, by 5 square miles. In the Central Circle all the Divisions except North Khandesh showed a decrease in the area burnt. The increase in the North Khandesh Division is attributed to fires having spread to inaccessible portions of forests. There were 9 such big fires in the Central Circle which burnt an area of about 52,000 acres.

In the West Khandesh Division including Mandvi, grazing fees were remitted in 20 villages and in 2 villages fees were reduced from 8 annas to 4 annas per head in view of the good fire-protection offered in that District. In addition, a sum of Rs. 124–11–0 was spent on giving rewards to Patils in the Mandvi Range. In the East Khandesh Division persons offering help in putting out fires were paid in cash.

Communal punishment.

5. The cases of communal punishments in West Khandesh referred to in Chapter VIII of the Conservator of Forests, Central Circle's report have already been dealt with in paragraph 5 of the last year's review.

Grazing fees.

6. There was a slight increase of Rs. 31 in the revenue realized from grazing fees during the year under review.

General Remarks.

7. Owing to the scarcity of fodder caused by the dearth of rain, the forest villagers in the Nandgaon and Malegaon Talukas of the East Nasik Division were allowed the concession of removing anjan leaves free for fodder till 15th August 1934. Similar concession was also granted during June and July 1934 to the following villages on the border of West Khandesh and Nasik Districts :—

(1) Chikhalwahal, (2) Zodge, (3) Nala, (4) Khadi, (5) Shendurni, (6) Dasana.

It is satisfactory to note that the gross forest revenue in the Central Circle for the year under report rose by Rs. 81,953 over that of the previous year. The increase is reported to be chiefly due to the better prices obtained for coupes in all the divisions in the Central Circle except Satara.

I am glad to note that the decrease in the total area burnt in the Central Division, the decrease in the total number of offences and the increase in the gross forest revenue in the Central Circle indicate a successful year's working in this Division as a whole.

Commissioner, Southern Division (H. B. Clayton, C.I.E., I.C.S.) :

Southern Circle.

It is gratifying to note that in spite of the heavy slump in the timber and fuel market and the general trade depression, the Forest Department shows a rise in its net income by an increase in its revenue and a decrease in its expenditure.

2. Forest offences recorded an increase. There was a decrease in forest fires while all other offences increased. The increase in "other offences" and "unauthorized fellings" was not inappreciable. It is explained that the variations in the former cannot be traced to any

particular cause. The rise in the latter is considered by the Conservator to be purely on economic grounds. The Commissioner is inclined to agree with this view.

3. There was a fall in the total number of cattle admitted to grazing which is considered to be mainly due to the prevalence of cattle diseases. The income from the grazing fees, however, showed an increase.

4. The Revenue administration of the four forest Mahals in the Circle continued to be satisfactory.

5. The proposals of the Forest Advisory Committee, Dharwar, to extend the period for the collection of the grazing fees and the period of shooting in forests in the case of gun clubs are under consideration and will be submitted to Government in due course.

6. The working of the Alnavar-Dandeli Railway resulted in a net loss of Rs. 3,967 during the year against the net profit of Rs. 803 in the previous year. Operating under the conditions it does the Railway cannot be expected to be a commercial success and the loss could fairly have been avoided by an increase in rates, so as to reduce the profit of the department. The step is not however necessary unless the loss is very considerable.

7. The scheme of gun clubs for protection of crops from wild pigs is making steady progress. Six more clubs are reported to have been formed in the Dharwar District.

8. The year was uneventful and the cordial relations between the Revenue Department and the Forest Department were maintained.

Kolaba Division.

The total revenue was Rs. 1,72,552 as against Rs. 1,62,689 last year and the total expenditure Rs. 1,26,626 as against Rs. 1,24,795 in the previous year, the result being that the surplus rose from Rs. 37,894 to Rs. 45,926.

2. There was a decrease of 9 in the total number of forest offences. Forest fires and unauthorised cuttings increased while illicit grazings and other offences decreased. The rise in the forest fires is small when compared with the last year's figure, but it is considerable when compared with the average of the past 3 years. The total area damaged by fire, which was 5,759 acres as against 4,260 acres in the previous year, also indicates that the extent of rise in this form of offence is not so small as the increase of 5 in the number of offences suggests. It is therefore desirable to adopt effective preventive measures as observed by the Collector.

3. An area of 13 acres out of the casuarina plantations at Akshi and Nagaon was washed away by erosion.

4. The net forest revenue paid to the Matheran Municipality rose from Rs. 1,046-11-0 to Rs. 1,777-9-0.

5. The appeal preferred by Sardar Bivalkar to the Privy Council is still pending.

6. The Advisory Committee, Kolaba, held one meeting; but no subject of importance was discussed.

7. The relations between the Revenue Department and the Forest Department continued to be cordial.

Commissioner in Sind (Mr. G. F. S. Collins, C.I.E., I.C.S.):

The chief events of the year have been an inundation much below that of the previous year which has resulted in only 294,900 acres being flooded compared with 552,547 acres in the previous year, and a very noticeable increase in the total revenue and the surplus revenue after deducting expenditure. The latter has been due mainly to the improved prices obtained for coupes, but it reflects credit on the administration of the department.

* * * * * * *

The visit of the Inspector General of Forests in connection with the Committee appointed by the Government of India to examine the areas selected for irrigation plantations in the Larkana and Shikarpur divisions was an event of importance, and although it has not at present led to any results, the Commissioner considers that the recommendations of the Committee merit careful examination by the future Government of Sind.

The scheme of game sanctuaries referred to in the last section of the report is also a matter which should receive attention in the future.

Mr. Brooks carried out his duties as Conservator with considerable energy and judgment.

D. B. SOTHERS,

Chief Conservator of Forests,

Poona, 9th October 1935. Bombay Presidency.

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Report.

Forest Department.

Administration — of, in Bombay Presidency, including Sind, for 1934–35.

GOVERNMENT OF BOMBAY.

REVENUE DEPARTMENT.

Resolution No. P. 57/22201.

Bombay Castle, 7th December 1935.

Letter from the Chief Conservator of Forests (Mr. D. B. Sothers), No. 2/1712, dated the 9th October 1935– Submitting the Forest Administration Report of the Bombay Presidency, including Sind, for the year 1934-35.

RESOLUTION.– The administration of forests in the Bombay Presidency presented no very striking features in the year under report, but certain general remarks and comparisons with the working of the Forest Department in former years may be of interest.

2. The forest area changed but little. Between 1st April 1934 and 31st March 1935, there was a net decrease of 11 square miles in area. Areas of 10 square miles in all, out of reserved forest in the Northern, Central and Southern circles, were disforested chiefly for purposes of cultivation, while 11 square miles of waste land in the Mandvi Subdivision of the Central Circle were afforested.

3. There was an increase of 1,951 cases in the total number of forest offences, the increase being shared by all circles. But this does not represent any increased law-breaking tendency on the part of the people living in forest areas, being attributable rather to better detection of such offences as do occur. Increase in the number of cases both of unauthorised fellings and unauthorised grazing is, therefore, largely attributable to the causes referred to in the review of the previous year's report in which it was shown that stricter supervision and greater vigilance on the part of subordinates has led to fewer cases going unnoticed and unrecorded. Better supervision appears to have been the reason for 95,068 cattle being impounded as compared with 89,996 in the previous year. 89 per cent. of cases taken to court and decided in the year under report resulted in conviction. This figure shows that the satisfactory position in the two previous years, in which the figures had been 90 per cent. and 89 per cent., respectively, has been maintained.

4. Unfortunately, avoidable loss that the Presidency has to undergo yearly on account of forest fires due to carelessness shows no tendency to diminish. But the area of forest successfully protected (94 per cent.) was well up to the average of past years. Both the Northern and Sind

circles showed an increase in the area burnt, but for this the severe frost of February 1935, causing the grass to dry up early and the forests therefore to be more inflammable, must be held largely responsible. Certain natural causes such as poor quality of the grazing available, due to frost or deficient rainfall (with, as far as concerned the Northern Circle, consequent migration of certain shepherds to Berar), resulted in a decrease in the number of cattle authorisedly grazing in the forests, as compared with the previous year; the figures for the two years being 2,426,021 and 2,538,734, respectively. The figure for 1934-35 was, however, above the average for the previous three years, that is, 2,405,404. Grazing fees collected during the year were Rs. 5,56,790 as compared with Rs. 5,61,056 in 1933-34. 573,282 cattle were admitted free as compared with 615,183 in the previous year.

5. The scheme of organising gun clubs for protection of crops against wild pig made considerable progress, and by the end of the year under report 10 clubs, five in Belgaum and five in the Dharwar District, had been organised and were in operation.

6. The financial aspect of the year under report showed an improvement on the previous year. The timber coupes in the Northern Circle commanded better prices, and the timber market in the north of the Presidency showed steady improvement as did the fuel and charcoal market in the Central and Sind circles. The increase in business with the Madras and Southern Maratha Railway was a very satisfactory feature and with prospects of increased maintenance and constructional works on this Railway disposals of matti logs, teak logs, teak sawn wood and sleepers may be expected to improve still further in the future. A gross revenue of Rs. 55,33,750 showing an increase of Rs. 1,03,660 over the previous year, and a surplus over expenditure of Rs. 24,18,312 (Rs. 2,74,589 better than in 1933-34) are figures which may be accepted as indicative of satisfactory working in the year under report; a result for which the thanks of Government are due to the officers of the department who are trying hard with good results to effect a recovery from the position to which the combined forces of economic slump and civil disobedience had given rise in 1930-31.

By order of the Government of Bombay
(Transferred Departments),

T. E. STREATFIELD,
Under Secretary to Government.

To

The Commissioner in Sind,
The Commissioners of Divisions,
All Collectors, including the Deputy Commissioner, Upper Sind Frontier.

Digitized with financial assistance from
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on 24 February, 2020

The Chief Conservator of Forests,
All Conservators of Forests,
The Director of Land Records,
The Director of Agriculture,
The Chief Agricultural Officer in Sind,
The Director of Industries,
The Compiler, General Administration Report,
The Commissioner of Labour and Director of Information,
The Oriental Translator to Government,
The Accountant General,
The General Department,
The Finance Department,
The Public Works Department,
The Secretary to the High Commissioner for India, London (by letter).

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